

**PHONE-FRIENDLY HI-RES**

The Audeze EL-8 Won't Mind Your Portable

**ATMOS VS. ATMOS:** In-Ceiling Or Atmos-Enabled Height Speakers? We Test Them Both!

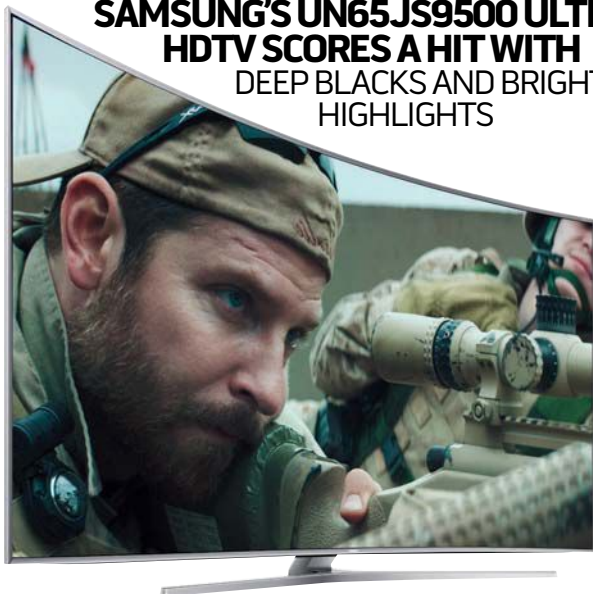
# SOUND & VISION

TESTED  
ACEMILE  
3D  
THEATRE  
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P18Where Technology Becomes Entertainment™ [soundandvision.com](http://soundandvision.com) SEPTEMBER 2015**A CHILD COULD DO IT:** Sony's STR-ZA3000ES Receiver Sounds Great, Too

## SPEAKER SPECIAL

**TOWERS, SATELLITES,  
SOUNDBARS  
& MORE...**FROM PSB, DAYTON,  
DALI, TRIAD & ARCAM

## BULL'S-EYE!

**SAMSUNG'S UN65JS9500 ULTRA  
HDTV SCORES A HIT WITH  
DEEP BLACKS AND BRIGHT  
HIGHLIGHTS**

### PSB T3 TOWER

PAUL BARTON'S  
NEAR-PERFECT  
FLAGSHIP  
DELIVERS HIGH  
END FOR LESS

# D.

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# SYMPHONY 1

Executive *Bluetooth*® headphones  
with Active Noise Cancellation

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# Preview

**ON THE COVER** Speaker Special: Towers, Satellites, Soundbars & More from PSB, Dayton, DALI, Triad & Arcam. Additional gear from Audeze, Samsung, and Sony.

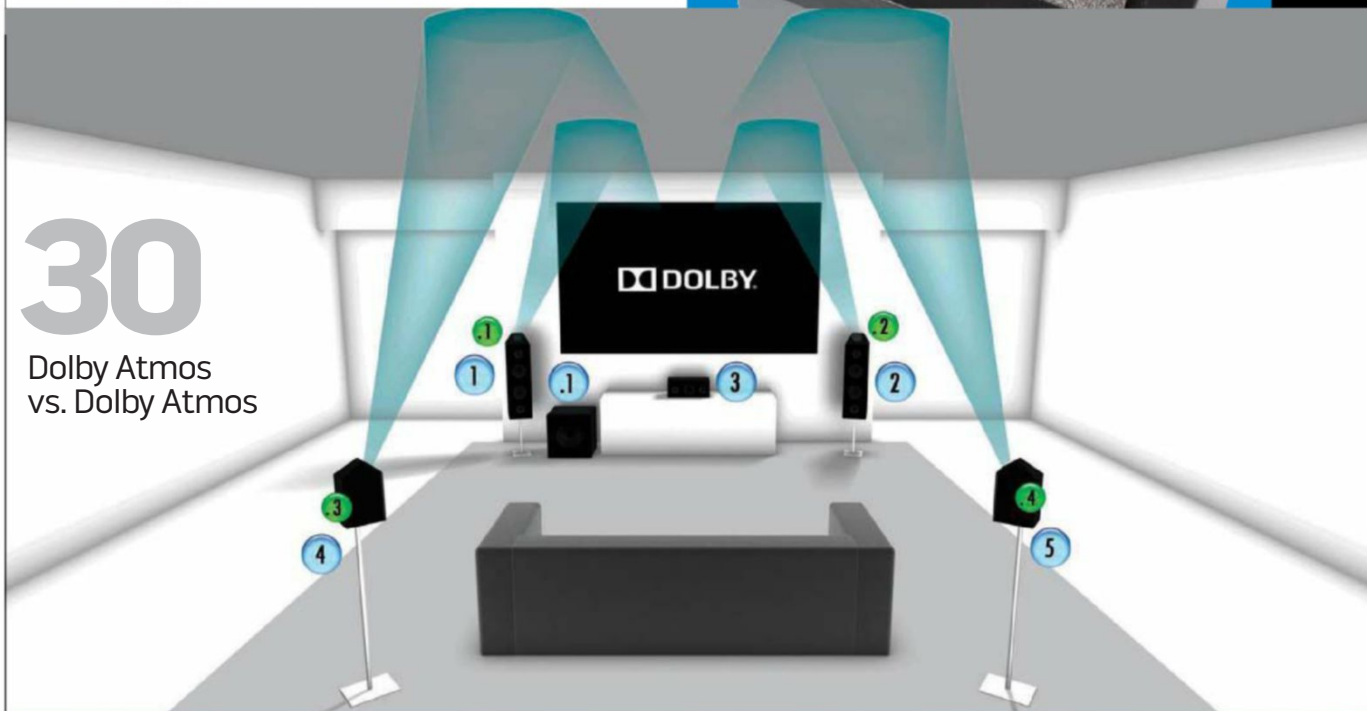


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Dolby Atmos  
vs. Dolby Atmos



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# D.

DEFINITIVE TECHNOLOGY

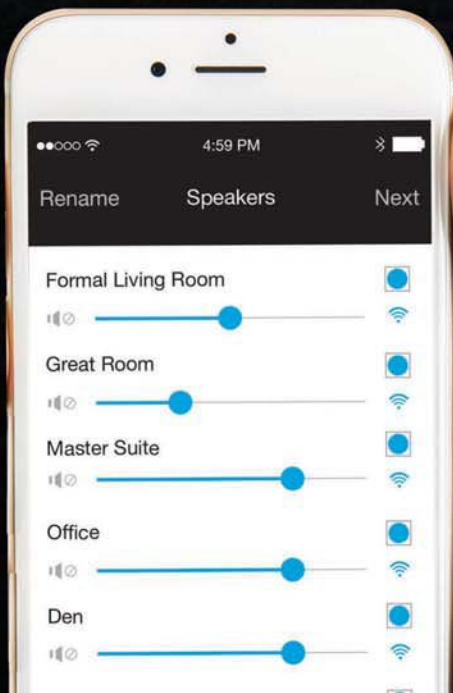
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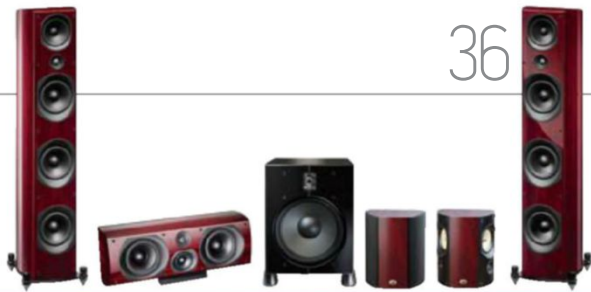
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Model K2



# GoldenEar's 3D Array Soundbar is "Absolutely Unbelievable"

— Darryl Wilkinson, *Home Theater Magazine*



3D Array \$999

FF3 \$499

**"Most exciting soundbar demo I heard"**  
— Brent Butterworth, *Sound&Vision Magazine*

We call the SuperCinema 3D Array, quite simply, "an extra-ordinary high-end loud-speaker system disguised as a soundbar." It is designed to combine the form factor of a sleek, stylish soundbar, with the performance of a true, high quality, component system. The complete ultra-high-performance system would include a powered subwoofer and a receiver or separates; plus the 3D Array achieves superb three-dimensional surround performance with or without rear surround speakers. Its 2.7" thin cabinet is constructed of aircraft-grade aluminum and contains six of GoldenEar's signature cast spider leg basket bass/midrange drivers and three High-Velocity Folded Ribbon Tweeters along with our breakthrough 3D Technology that cancels interaural crosstalk distortion for total sonic immersion.



High-Velocity Folded Ribbon Tweeter (HVFR™)



High-Definition Cast-Basket Bass/Midrange Driver

**"Awesome just got redefined"**

— Darryl Wilkinson, *Home Theater Magazine*

The 3D Array sounds amazing and the experts certainly agree. Al Griffin of *Sound & Vision* wrote that the 3D Array System, "...delivered at least 90% of my main rig's [Triton Two Towers] performance." Chris Martens of *The Absolute Sound* raved, "...a soundbar system so good that audiophiles might buy it for music playback alone...if asked to recommend a soundbar to please finicky, hypercritical audiophiles, this would be my hands down choice." And *Home Theater*'s Darryl Wilkinson summed it up perfectly when he raved that, "the width and openness of the soundstage was absolutely incredible" calling it "an instant classic" that is "a must-listen-to, top-of-the shopping list, soundbar-to-beat...when it comes to soundbars awesome just got redefined."

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September 2015

# TrackOne

## HI-RES AND THE ART OF PROVENANCE

Hi-res audio has a dirty little secret, but it's one you already know.



BY ROB SABÍN,  
EDITOR

In our June issue, Ken Pohlmann's Signals column ("Saving Hi-Res Audio," also available at [soundandvision.com](http://soundandvision.com)) spotlighted the near-rabid sniping in the audiophile community and the public at large about whether hi-res audio delivers real, discernible benefits. Ken suggested that if the music industry wants hi-res to succeed, they should drop the significant premium now attached to hi-res downloads and charge the same as for any other music file, then reap the benefit of people buying more music because they like engaging with high-quality content.

A number of readers agreed, but one e-mail that stood out came from Rob Hardin, of Cleveland, Tennessee, who, after "drinking the Kool-Aid" (his words) purchased an AudioQuest DragonFly (one of our highly recommended budget USB DAC/headphone amps), a pair of PSB headphones (also recommended), Pure Music library management software, and (again, his words) "several hi-res downloads."

"I was not impressed," he wrote. "The music did not make me smile. Music, if well done, should make us smile. Maybe it was my old ears. So, I solicited my much younger brother as we are both practicing, amateur audiophiles. My brother could not tell the difference between the hi-res and my normal CDs, either. Is it snake oil? Well, I do not know. But I am through with hi-res purchases at \$17.95 a pop for something I can't brag about or impress my brother with."

Hardin did not specify which hi-res files he purchased, but there's a good chance he fell into a trap, for which I'm ashamed to say we've not really warned our readers about to date. Hi-res files are available from many sources, some free, some paid. I'm not here to pass judgment about the record labels and handful of Web retailers who are, for now, reaping whatever profits the market will bear by selling hi-res versions of popular back catalog titles to a still small but dedicated audiophile community. But our reader's story exemplifies the problem with having music that's labeled as being something special but delivers only a common—or worse, uncommonly bad—listening experience.

News flash: There are good recordings and bad recordings out there, and as enthusiasts, we've always selected our content—whether vinyl LPs, CDs, laserdiscs, DVDs, Blu-rays, and now downloads—based on what we've been able to learn from reviews and recommendations about the quality of the music or movie, plus the quality of the recording. Unfortunately, it's no different with hi-res—bad production values in the initial recording session or mix don't get any better just because they've been transferred from an analog master into a high-resolution audio format. But the fact that it's been tagged as, say, 96-kHz/24-bit PCM or DSD, gives the music label and retailer license to sell that as a high-quality listening experience. Even worse, the music industry has been guilty of either knowingly or unknowingly taking 44-kHz/16-bit CD-quality digital masters, upsampling these to higher-than-CD-quality files, and selling *those* as hi-res.

Fortunately, the Recording Academy (best known to you as the folks who administer the Grammys), the Digital Entertainment Group, the CEA, and the RIAA all realize what's at stake here. As we went to press, the RIAA announced a new "Hi-Res Music" logo (above) to be associated with finished files at retail to officially define "lossless audio capable of reproducing the full spectrum of sound from recordings which have been mastered from better-than-CD-quality (48-kHz/20-bit or higher) music sources which represent what the artists, producers, and engineers originally intended." That's a good start, but what the logo can't do is tell you which analog or hi-res digital masters sucked to begin with. For that, you can read our reviews or the hi-res forums online. Kinda like the old days.

*JB*

**There are good and bad recordings out there.**

### Customer Service And Subscriptions

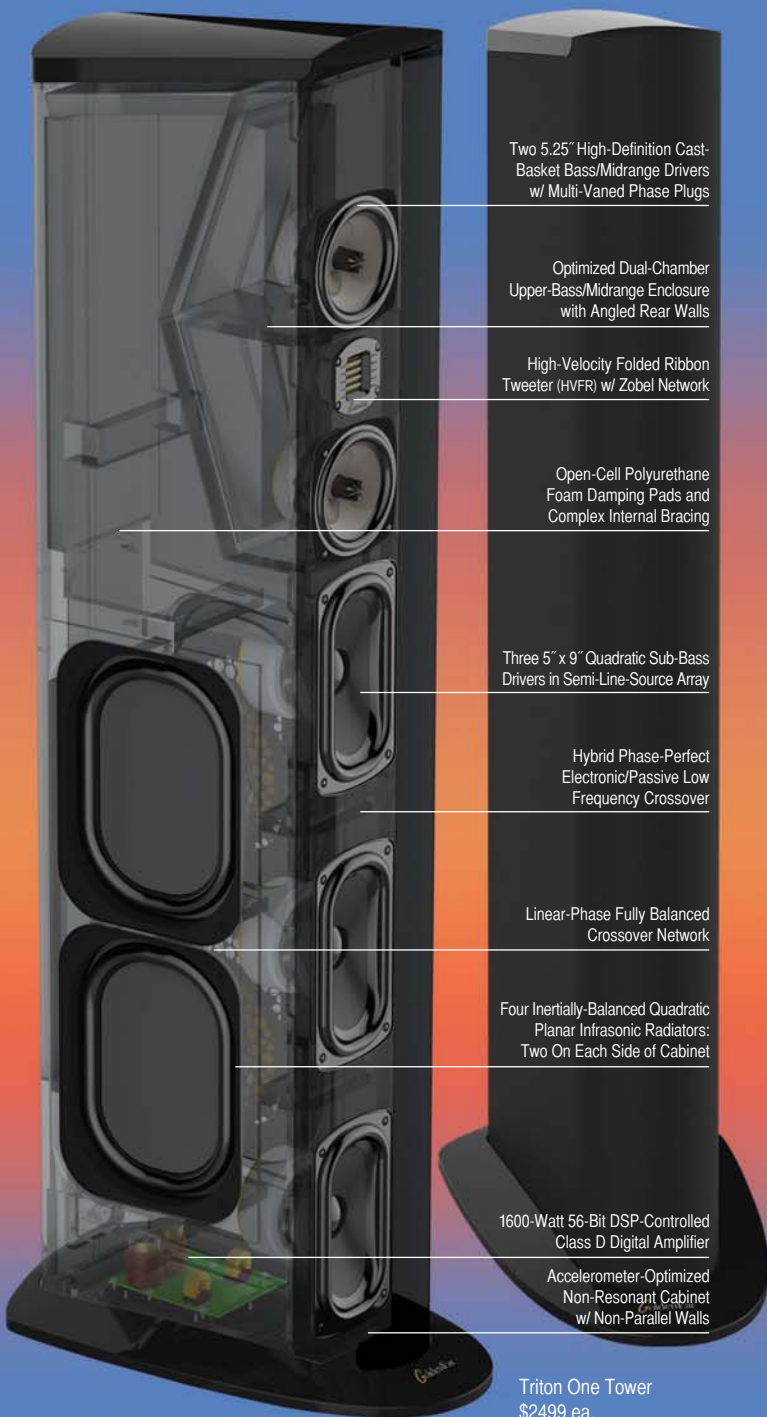
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# GoldenEar has Engineered Our New Triton One to Perform Like a \$20,000+ Super Speaker!

*"Revelatory ... cosmically orgasmic ... astounding performance-vs-price ... these speakers absolutely embalm the competition"* – Darryl Wilkinson, *Sound & Vision*



*"Triton One shames some speakers costing ten times as much ... it is an absolute marvel"*

– Caleb Denison, *Digital Trends*

*"Best High-End Value at CES 2014 ... Sandy has created a speaker that defies its price point"*

– John Sciacca, *Residential Systems*

*"Best of CES 2014 ... stunning realism ... the sound was truly grand and majestic"*

– Roger Kanno, *SoundStage*

*"Best Sound for the Money at CES 2014"*

– Jonathan Valin, Kirk Midskog and Neil Gader, *The Absolute Sound*

Introducing Triton One, an evolutionary speaker that builds upon advanced technologies that have made Tritons mega-hits around the world. Stereophile called them, *"A Giant Killer Speaker"* and Robert Deutsch further added, *"it's not unreasonable to compare the sound of the \$4998 Triton One with speakers costing tens of thousands of dollars more"*. This new top-of-the-line flagship was engineered to deliver even better dynamics and bass than the extraordinary Triton Two, along with further refinement of all aspects of sonic performance. How well have we succeeded? In the words of HD Living's Dennis Burger, the Triton One delivers, *"... the sort of upper-echelon performance that normally only comes from speakers whose price tags rival a good luxury automobile"*.

*Triton One "creates visceral, tangible waves of pure audio bliss"*

– Dennis Burger, *HD Living*

Great sound is what it is all about and the Triton Ones deliver, as The Absolute Sound's Anthony Cordesman wrote *"they provide sustained musical pleasure and exceptional realism ... extraordinary sound quality and value ... one of the best buys in speakers ... highly recommended"*. The Ones were specifically engineered to excel with all types of music as well as movies. Best of all, they offer previously unheard of value, as Brent Butterworth wrote in *Sound & Vision*, *"I heard a few people saying the Triton One sounded like some \$20,000-and-up high-end towers, but I disagree: I think they sounded better than most of them"*. Hi Fi's Chris Martens raved the Ones are, *"jaw-droppingly good ... one of the greatest high-end bargains of all time with a dazzling array of sonic characteristics"*. And Darryl Wilkinson summed them up best, *"A Masterpiece ... GoldenEar has fully ushered in the Golden Age of the Loudspeaker"*. Hear them for yourself and discover what all the excitement is about.

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# GoldenEar's ForceField Subs: "Near perfect... a tour de force"

— Andrew Robinson, *HomeTheaterReview.com*



FF3 \$499

FF5 \$999

FF4 \$699

## "Thunderous...Room-Shaking"

— Al Griffin, *Sound&Vision Magazine*

GoldenEar's ForceField subwoofers are true over-the-top super subs that are especially remarkable for their compact size and unusually affordable prices. All three incorporate the same advanced technology and components including: DSP controlled high-power digital amplifiers (1000, 1200 or 1500 watts), ultra-fast long-throw high-gauss magnet structure drivers (8", 10" or 12") and pressure-coupled downward-firing quadrate planar infrasonic radiators. In addition, their uniquely shaped cabinets are not just attractive, but are also purposefully configured for dramatic performance benefits.

## "Extraordinary bass prowess... I've never heard a sub this small go that deep"

— Steve Guttenberg, *The Audiophile*

With their high output capability, stunning impact, superbly musical bass articulation and breathtaking infrasonic low frequency capabilities, the ForceFields have received the highest praise from critics, experts and knowledgeable listeners around the world. Geoff Morrison of Residential Systems raved, "their thunder filled the room." AV Forums praised the, "monstrous output for such a small sub." Mark Fleischman of *Home Theater* wrote, "I was dumfounded" over their, "low frequency barrages with floor-shaking confidence." And to top it off, the British writer Stephen May raved, "this astonishing box can pressure-load a room like an angry Silverback" and Andrew Robinson warns, "Your walls, floorboards, and ceiling may just crap out on you." And, as Dennis Burger of *Tech Tell* observed, they are also, "shockingly musical!"

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# GoldenEar's New "World Beating Triton Five"

— Mark Fleischmann, *Sound & Vision*

*"They absolutely rock the speaker world's foundation to the core ... delivering the kind of musical bliss some pay upwards of \$10,000 for"* — Caleb Denison, *Digital Trends*

*"Showstoppers ... they sounded obscenely good"*

— Jerry DeI Colliano, *Home Theater Review*

In keeping with GoldenEar's tradition, the Five's auspicious debut at the 2015 CES Show had a jaw dropping effect on the world's audio press. Sound&Vision's Rob Sabin wrote that the Fives were, "spectacularly open and transparent with wide deep sound staging" and "nearly brought me to tears thanks to the tremendous detail the Fives rendered on a Buddy Holly recording". Stereophile's Herb Reichert wrote, "These loudspeakers disappeared better than any I have ever heard" and then added, "While the music was playing I swear I could see nymphs and goddesses dancing around the soundstage". Normally outspoken writers like Sound&Vision's Darryl Wilkinson said, "I am running out of superlatives", and HD Living's Dennis Burger raved, "Quite frankly stupefying ... bowled away doesn't scratch the surface".

*"The value for the money here is clear off the charts"*

— Chris Martens, *HiFi+*

GoldenEar's goal is to deliver to you absolutely the best sound possible for the money. Superbly lifelike three-dimensional imaging, ultra high resolution, tremendous dynamic range, extraordinary deep bass response, silky smooth high frequency extension along with you-are-there clarity and presence are all a result of GoldenEar's most advanced components and technologies. Best of all, the Fives will deliver exceptional performance with moderately priced receivers, while also allowing you to appreciate the subtle qualities of the world's finest audio components. And, just as importantly, they deliver state-of-the-art sound quality with two channel music as well as multi-channel home theater, including Dolby's new Atmos technology, when paired with our perfectly matched center channel, surrounds, height speakers and subs.

*"Best Sound for the Money at CES 2015"*

— Robert Harley and Neil Gader, *The Absolute Sound*

The Triton Five is already adding illustrious new awards to GoldenEar's impressive collection. Although many focus on value for the money, some writers, like Sound Advice's Don Lindich, go further, giving them "Best Sound at the CES Show" and writing, "this is a cost-no-object preference for me". HD Guru's Gary Merson gave them "Top Pick Speaker at CES" and wrote, "They blew us away ... breaks new ground, outperforming competitors costing thousands more". SoundStage's Doug Schneider awarded a "Best System" honor. You owe it to yourself to visit your nearest GoldenEar dealer today!



Triton Five Tower  
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Introducing the New

# Triton One

from GoldenEar Technology®



\$2499.99/ea



*"With Triton Ones, GoldenEar Technology has fully ushered in the Golden Age of the Loudspeaker"*

*– Darryl Wilkinson, Sound & Vision*

*"In every criterion that matters to me, the speaker simply punches way above its weight class ... there's an awful lot of magic to enjoy here"*

*– Dennis Burger, HomeTheaterReview.com*

*"It provides extraordinary sound quality and value for the money. They have all—or more—of the features and technology that anyone looking for specsmanship could want, but their real merit is that they provide sustained musical pleasure with exceptional realism. Highly recommended"*

*– Anthony Cordesman, The Absolute Sound*

*"It is an absolute marvel ... Triton One shames some speakers costing ten times as much."*

*– Caleb Denison, Digital Trends*

*"Even with your eyes open, it's practically impossible to make yourself realize that you're not listening to living, breathing human beings playing actual instruments in front of you."*

*– Darryl Wilkinson, Sound & Vision*

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# Letters

We welcome  
questions and  
comments

**E-mail them to [HTLetters@sorc.com](mailto:HTLetters@sorc.com).** Please note: Questions about the features and functions of a particular product are best directed to the manufacturer. Questions about what product you should buy are best directed to a dealer who knows all the details of your system, your preferences, and your personal habits. All submissions are considered the exclusive property of *Sound & Vision* magazine and TEN: The Enthusiast Network. We reserve the right to edit letters for brevity. Due to the volume of mail that we receive, we regret that we cannot respond to every letter.

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**David Bowen**

Monrovia, CA

*When we calibrate displays, the idea really is to get as close as possible to real-life accuracy. But despite the simplicity of the logic applied here, doing that without expensive instrumentation and training is virtually impossible. The trouble is getting through the maze of myriad variables in a display's picture controls to achieve the desired result.*

*Start with the notion that today's displays are already compromised in being unable to achieve the wide dynamic range (bright highlights and deep blacks) and wide gamut of color seen by the human eye. Then try poking around in the controls until you think you have it, and see how you do. If it were strictly a matter of setting basic contrast, brightness, color, and tint controls, we could all use a Blu-ray setup disc with some test patterns. But a typical calibration also involves fine-tuning grayscale—at up to ten different brightness levels—with tweaks to the red, green, and blue color trims that adjust the mix used to achieve a neutral white. That's as many as 30 sliders to adjust, just for grayscale, and the eye's ability to see the subtle effects of these individual controls without instruments is questionable at best, though the eye will likely detect the aggregate mess when things aren't right. Add to this as many as 18 sliders that might be used to fine-tune the color points, including hue, saturation, and luminance for the red, green, and blue primaries and magenta, cyan, and yellow secondaries.*

*Can you get close to an accurate and pleasing picture (within the set's limits) by selecting the best preset picture mode and then tuning the basic controls with a disc or even by eye? Maybe. But it won't likely be at the highest level of accuracy the set can ultimately deliver. And if you try to fine-tune by eye, you're sure to be frustrated by how quickly you end up moving away from the ultimate goal instead of toward it.—RS*

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## LETTERS

### It's Gonna Be WHAT?

Sure would be great if your magazine would do an article on Dolby Vision. My research indicates it will be the new standard of movie and television production and distribution.

**William Caton**  
Chichester, NY

*We did cover the basics behind wide color gamut, high dynamic range (HDR) technology, including Dolby Vision, a few months back ("The Other OLED," January 2015 and available at [soundandvision.com](http://soundandvision.com)). But this remains an evolving story, with multiple proposals now being floated for content standards and display requirements.*

*The two primary options remain Dolby Vision and a couple of previously agreed-upon industry standards for color and dynamic range content mastering developed by SMPTE (the Society of Motion Picture & Television Engineers). Both of these will most likely be supported eventually by Ultra HD Blu-ray players that are expected to hit market late this year, and some streaming services will be getting in on the game as well with some kind of HDR-encoded content. But it'll ultimately be up to the content providers—the film studios, the Netflixes and Vudus of the world, and the post-production houses—to decide what if any encoding will be provided to support HDR and wide color gamut.*

*Dolby's proposal is said to be more aggressive than the current SMPTE standards provide but will require even greater demands on the displays. And any TV manufacturer or content provider who wants to toe the Dolby line and produce products certified to achieve the Dolby Vision display standard will have to pay Dolby for the privilege. So far, I'm aware of only one TV maker that's agreed to do so—Vizio, with its still unreleased Reference series models—and one studio, Warner, that's agreed to encode some movies in Dolby Vision for streaming via Vudu. Other manufacturers, notably Samsung and Sony, are already delivering wide-gamut, HDR displays using proprietary technology, and just waiting for the content to catch up. It's going to be an exciting time as movies that combine Ultra HD resolution, wide color gamut, and HDR highlights begin trickling into the marketplace. But I'd caution against buying into Dolby's hype about their proprietary, licensed technology becoming "the new standard of movie and television production and distribution." We're still a ways away from that.—RS*

### Light My Quadraphonic Fire

As the "caretaker" of the nonprofit surround sound enthusiast's Internet Web forum QuadraphonicQuad ([quadraphonicquad.com](http://quadraphonicquad.com)), I am always very pleased when the

latest copy of *Sound & Vision* arrives with an article or review concerning artists who create and release their music in more than two channels. Your magazine is one of the few places anywhere that gives its readers information and reviews of surround music, and it seems you do it almost every issue, which is very appreciated.

The latest issue arrived yesterday, and there on the cover was a blurb about The Doors and their surround sound legacy in 5.1. It was a very informative article and a good showcase for both the *Perceptions* DVD-A box set and the *Infinite* SACD box set, both containing all of their classic catalog albums in new 5.1 surround mixes created with loving care by those who should care.

That article, however, missed a very important piece of their surround sound history. In 1973, at the dawn of the Quadraphonic era, a Doors greatest hits album was created by Elektra with the express purpose of showcasing the newborn "quadraphonic sound." This album was only available in quad and remained that way well into the '80s (with the exception of a record club-only stereo pressing). Everyone who purchased this album got the quad version, although the majority of the many people who owned it never got to hear it in surround because they did not have the proper CD-4 decoding equipment of the time to hear it in quad. This summer, this album has been remastered in stereo and quad by Steve Hoffman and released as a 2.0/4.0 hybrid SACD by Audio Fidelity. The sound on this disc is spectacular, and just as many music fans long for their favorite stereo albums to be released in their original form instead of some modern remix, this SACD gives the surround sound community a way to hear the original quad mix from that 1973 album the way it was meant to be heard, and cleaner than ever before.

I hope you guys get to listen to it and review this release, as it is not only an important piece of surround sound history, it is an album that belongs in the collections of every Doors fan and collector.

Keep up the good work with your surround artist and release articles. They are very much appreciated and looked forward to.

**Jon Urban**

QuadraphonicQuad

### Tidal Wave

I find that a subscription to *Sound & Vision* along with a subscription to [tidalhifi.com](http://tidalhifi.com) is a perfect match. Now, when I read an interesting review of some music, I can switch over to tidal and immediately have a listen in CD quality.

**William Main**  
Via e-mail





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– Jeff Fritz, *SoundStage! Network*, October 2013 (e112)

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– Daniel Kumin, *Sound & Vision*, February 2014 (e110)



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# Perfect focus

NEW GEAR, TOP NEWS, HOW TO, AND MORE...

Edited by Claire Crowley

## Finding the Deep Note

### ● The Story Behind THX's Infamous Sonic Swell

You've heard it on THX-certified DVDs and Blu-ray Discs and in THX theaters. It's the perfect crescendo, that indescribably fantastic swell of sound that's been wowing moviegoers for more than three decades. We recently spoke with Dr. James "Andy" Moorer, composer of the "THX Logo Theme," to get the story behind the iconic flourish, which debuted in the THX trailer *Wings*, shown before the 1983 premiere of a movie you might remember—*Star Wars: Episode VI—Return of the Jedi*.

**S&V:** It's been more than 30 years since moviegoers first experienced the Deep Note, the signature sound of THX. What was the original intent behind it?

**AM:** There is a bit of a story behind THX and the logo theme. At the release of *Empire Strikes Back*, some of the audio people at Lucasfilm were sent to one of the premier cinemas in San Francisco to make sure the sound was OK. Tomlinson Holman,

### ● Andy Moorer



inventor of the original THX audio system, was part of that crew. The first thing they wanted to check were the three large Altec Lansing "Voice of the Theater" speakers behind the screen. They found three speakers, all right, but only one was set up correctly. The second was facing backwards, and the third had fallen over and was not connected at all! Tom was so horrified that he vowed to do something to make sure the theater experience would be as close as possible to what professional sound mixers heard. That was how the THX sound system was born.

The system was to have its premiere at the release of *Return of the Jedi*. They wanted something to announce the new sound system, so they decided to produce a short "logo" video (with sound). The job was given to an ambitious fellow, who produced an absolutely stunning piece of video animation. I don't know this for sure, but I think he spent all the money on the animation and didn't have anything left to hire a big-name film-music composer, so he came to me with the task. He said he wanted something that "comes out of nowhere and gets really, really big." As soon as he described it, I knew exactly what I wanted to do.

**S&V:** When and where did "Deep Note" first appear? How did people respond to it initially?

**AM:** It appeared in the big 70mm theaters around the country that had agreed to install a THX sound system. There were about 160 such theaters at the time of the release of *Return of the Jedi*. Of course, the movie was so highly anticipated that

the first few presentations of Deep Note were inaudible over the applause at the start of the feature.

**S&V:** Technically speaking, how did you create that sensational swell of sound?

**AM:** I was part of the Lucasfilm Computer Division. My group was given no less a task than to revolutionize film sound. We had spent two years designing, building, and programming a large-scale audio processor we called the ASP (Audio Signal Processor). We had programmed in so much audio processing power that it only took me about four days to program and "tune" the piece. I had set up 30 oscillators, or "voices." I had a main loop that went around and poked each voice once per second in sequence. At the top level was the timing of the overall piece—the initial fade-in, the "chaos" in the first seconds, and, finally, the big chord; the ultimate pitches were assigned and the oscillators went shooting off to their assigned notes in the finale.

**S&V:** What's the frequency makeup of the original Deep Note?

**AM:** The initial cluster starts with all 30 voices wandering around between G3 (G below middle-C) and G4 in a random fashion. After a point, they are assigned their final pitches. During the glissando, the frequency of each voice is moved directly toward the final pitch.

**S&V:** You recently created a new version of the Deep Note. How and



why did you update it?

**AM:** I was contacted by the folks at THX last summer (2014). They wanted three lengths and a number of different formats. I wrote the program to generate the Dolby Atmos version, which was the most complex, and simultaneously generated the other formats by mixing the voices in different ways.

**S&V:** The updated version is described as faithful to the original but "intensely more complex." How so?

**AM:** I got to use many more voices than the original. I was constrained by the limited horsepower of the ASP to 30 voices. The new trailer uses almost 70 voices. Also I had more speakers to work with. That gave me quite a bit more freedom to assign sounds to the speakers, and to "fly" the voices around the theater.

—Bob Ankosko

*An extended version of this interview appears on [soundandvision.com](http://soundandvision.com). A 5.1-channel version of THX's new Eclipse trailer in HD is available for download at [thx.com/thx-deep-note](http://thx.com/thx-deep-note).*



# This Just In...

By Mark Fleischmann

**Hulu Paid \$180 Million** for the right to stream all nine seasons of *Seinfeld* and cut another deal for rights to all AMC series. Hulu is also ditching the Hulu Plus brand for its paid service, which is now just Hulu ...



## Microsoft Will Use DRM on UHD

streaming with PlayReady 3.0. This might embolden studios to stream UHD through Windows 10...

## CES Attendance Will Be Capped

at 176,000 for 2016. Apparently 2015's record of 176,676 was as much as the mega-show and Las Vegas can handle...

## Apple Won't Do Ultra HD

in the forthcoming third generation of the Apple TV streaming box. Not mainstream enough, reports *Buzzfeed*...

## Streaming Video

will grow 26 percent this year. That'll leave old-school pay-TV in the dust, growing by just 3.7 percent through 2020...

## DirecTV 15,

the new satellite launched in May, will firm up the company's Ultra HD plans. DirecTV 14, launched in December, is busy with VOD and live streaming...

## Satellite Will Surpass Cable

as the pay-TV supplier of choice in 2015, forecasts Digital TV Research. However, TiVo reports that more of the cord-cutters using its Roamio antenna DVR are coming from satellite than from cable...

## Charter Bought Bright House

for \$10.4 billion. Time Warner Cable is also reportedly open to mind-melding with Charter; the TWC-Comcast merger having collapsed under regulatory scrutiny...

## Comcast's Voice-Activated Remote,

the XR11, will work with its cloud-based IP platform. Press the remote's blue mic button to pick channels or search for TV shows and movies via VOD, DVR, or live TV...

## Comcast's Gigabit Pro

ISP service is rolling out in the Atlanta area and aims to reach 1.5 million customers initially. Several California metro areas are slated to follow in June...

## Time Warner Cable Added Live

streaming of 300 TV channels to the TWC TV app on Xbox One. Nipping at TWC's heels, the AT&T U-verse app added 41 live channels to its TV Everywhere app, for a total of 236...

## Google's YouTube Kids App

has drawn fire from children's advocates. They say the app mixes ads and programming, features branded channels from fast food and toy companies, pushes company-generated "user" segments featuring toys and candy, and violates its own ad policies...

## The YouTube App Won't Work

on pre-2012 smart TVs, Blu-ray players, iOS devices, or devices running Google TV 1 or 2. Update to iOS 7 or Google TV 3 or 4—or run the site on Safari, Flash, or HTML 5...

## WeatherNation

made its debut on the Dish Network. However, Dish is also renewing the beloved Weather Channel and streaming it via Sling TV...



## PlayStation's First Original

programming is *Powers*, described as a 10-episode racy superhero cop show based on comic books. Those who pay \$50/year for a PlayStation Plus subscription will get a look at it—but with individual episodes going live on Tuesdays, they won't be able to binge-watch it...

## Harman and Crowd-Sourced

development company Quirky are getting together to create the "headphones of tomorrow." Backed by General Electric, Quirky has already created the Wink home automation hub through a subsidiary...

## Sprint and RadioShack

have a co-branding relationship in 1,440 of the 1,743 stores relaunched under post-bankruptcy ownership by Standard General. Sprint smartphones are featured along with private-label audio and power products, but laptops, tablets, and cameras will be de-emphasized...

## Best Buy Shuttered Future Shop,

the Canadian consumer electronics chain acquired in 2001. BB is closing 131 FS stores and converting the remaining 65 to Best Buys...

## Blu-ray Disc Nano-structures

can be recycled into solar power cells, increasing their efficiency at absorbing photons. And you thought you'd never find a use for that copy of *Hangover III*...

## Norway Will Kill Analog FM

radio in 2017. It'll be the world's full transition to digital radio broadcasting...

## The FCC Fined WDBJ

of Roanoke, Virginia \$325,000 for airing an adult film image on its 6 p.m. newscast. The commission said it was inappropriate when children would be watching...

## Low-Power TV Stations

will have to give up their spectrum 39 months after the FCC auctions off their former homes. Another nail in the coffin of free TV...

## Foreign Ownership

of U.S. TV stations might be allowed to rise above 25 percent, says FCC chair Tom Wheeler. Whoa, hold on—foreign ownership of U.S. TV stations is allowed?...

## Acemile Theatre Box Bluetooth Speaker

By Bob Ankosko

### Magic Box

**PRICE \$299**

**SINATRA IS** CROONING IN THE background. “I like New York in June, how about you? I like a Gershwin tune, how about you?”

Frankly (sorry, couldn't resist), I like what I'm hearing from the small box sitting on the filing cabinet in my home office. Impressive how clear and present the Chairman is on this Capitol recording (“How About You?”) released 59 years ago (*Songs for Swingin' Lovers!*). Even more impressive, his voice is coming from a speaker that's about half the size of a shoebox.

Pandora segues to “Thinking Out Loud” from Ed Sheeran's 2014 chartbuster, *X*. The bass is palpable; Ed's soulful voice fills the 12 x 12-foot room. Not bad.

That little blue speaker (also available in black) is the Theatre Box from Silicon Valley startup Acemile, founded by Richard Yan to build “hardware products and software platforms that challenge conventional thinking and exceed expectations.”

My initial impressions certainly exceeded what I expected from such a small speaker—in terms of sound and build quality. Removing the

#### AT A GLANCE

##### + Plus

- Compact design
- Impressive build quality
- Simple to set up and use
- Spacious, full-bodied sound with a kick

##### — Minus

- No remote control
- Not ideal for driving rock
- Not practical for use as a soundbar

Theatre Box from its gift-box-like white carton was similar to lifting a Belgian block. This thing is solid and well thought out.

Touch controls for phone, mute, track up/down, and volume up/down line its smooth plastic top, which is curved on the sides to meet a wraparound metal-mesh grille that conceals five speakers: a rear-firing 3-inch woofer and four 2-inch drivers, two of them firing forward and one on each side. Along the bottom edge of the back panel are buttons for power and Bluetooth pairing, a minijack input, and a power receptacle for charging its lithium-ion battery, which lasts for

upwards of 20 hours.

The Theatre Box uses a proprietary Q3D Holophony algorithm to create a “360-degree 3D surround sound effect, no matter where the listener is in relation to the speaker.” Yan describes it this way: “The system smartly gauges the soundfield space around it and [plays] sound like continuous bubbles. Each layer of these bubbles [is] encoded with directional information.”

I'm not really sure what all that means, but I can tell you I listened to many different types of music in a variety of settings and consistently liked what I heard. But I'm getting ahead of myself.

Setting up the Theatre Box couldn't be easier. I put my Samsung Galaxy S5 phone on top of the NFC icon to the right of the touch controls, and in a matter of seconds, a female voice announced, “Connected.” When I pressed the Bluetooth button to pair the Box with my iPad, same thing.

#### Music Inside and Out

The Theatre Box is easy to pick up and move around, and it even has a rubberized pad on the bottom so you won't have to worry about scratching furniture. The owner's manual suggests using the Box in an

#### RATING

**Acemile Theatre Box Bluetooth Speaker**

Performance ★★★★★

Features ★★★★★

Ergonomics ★★★★★

Build Quality ★★★★★

Value ★★★★★



#### THE VERDICT

**The little Theatre Box** will surprise you with its bold, big sound.

indoor space that measures between 15 and 120 square meters (roughly 160 to 1,300 square feet), “without any major obstacles,” and listening from 2 to 7 meters away (6.5 to 23 feet).

I started my audition with Boston's self-titled debut album, a classic-rock staple that seems to be played almost as much today as when it was occupying the airwaves back in 1976 and '77. I was struck by how big and spacious the sound was in an open (and very live) 16 x 30-foot kitchen/family-room area. The vocals and acoustic guitar on “Hitch a Ride” were airy and clean, and the raucous guitar solos toward the end sounded just right. (God, I love that song.) Volume wasn't screaming loud but respectable, and the bottom end had a surprising kick.

I moved the little speaker around both rooms and even brought it outside during a lunch break and was rarely disappointed. Dense, driving rock songs—like Paramore's “Ignorance” (from 2009's *Brand New Eyes*)—suffered from some degree of congestion, but I've found that to be the case with most small wireless speakers. Sound was most satisfying when I put the Box on a







cabinet in a 12 x 19-foot living room and streamed the soothing, sometimes effervescent indie folk of the Milk Carton Kids from my iPad. The spunky acoustic guitar and tight harmonies on "Undress the World" (from the duo's 2011 album, *Prologue*) stretched beyond the speaker with remarkable clarity, and the haunting vocals of "Michigan" summoned goose bumps. Astonishing for such a small speaker.

If you're streaming music from your phone and a call comes in, no worries. The lady inside announces, "You have an incoming call," which you can route to the speaker by touching the phone icon. She also announces when the battery is low—a great feature.

Ironically, the Theatre Box is not all that practical for use as a soundbar because there's no way to remotely control the volume. Even so, I grabbed a stereo-RCA-to-minijack cable and connected it to my cable box to see what it could do. The sound was certainly better than that of the TV's puny speakers, but it was nothing spectacular. Acemile says a control app is under consideration.

The Theatre Box is an amazing little speaker for casual music listening. It's dead simple to use and easy to move around, and it delivers delightful sound—especially with acoustic music.

## SPECS

**Driver Configuration:** 2 in drivers (4), 3 in "active bass driver" (1) • **Amplifier:** 56 watts (125 watts peak) • **Touch Controls (on top panel):** Phone, mute, track up/down, volume up/down • **Features:** Q3D Holophony technology, NFC automatic pairing, omnidirectional microphone, rechargeable lithium-ion battery with 20-hour (rated) life • **Dimensions (WxHxD, inches):** 10.3 x 4.3 x 3.3 • **Weight (Pounds):** 3.3 • **Connections:** Wireless via Bluetooth with aptX, 3.5mm analog audio input • **Accessories:** AC charging cable, minijack cable • **Available Colors:** Black, blue

## PERFECT FOCUS

# The Connected Life

JOHN SCIACCA



## Network Lockdown



About a month ago, ABC's *Nightline* ran a segment called "Smart Homes, the Future of High-Tech Living" where they discussed different aspects of living in a smart home. Part of the segment demonstrated a smart home's potential vulnerability to being hacked, giving outsiders access to your home and data. *Nightline* drove the point home by having a hacker sit outside a home with a high-powered directional antenna while he logged into the Wi-Fi network and started wreaking all manner of havoc, including unlocking her front door.

The *Nightline* segment underscored the necessity of safeguarding and securing your home's Wi-Fi network. (In fact, the hacker was unable to crack the homeowner's Wi-Fi password even after several weeks of brute-force attempts, and the homeowner ultimately provided him with the Wi-Fi password to demonstrate what *could* happen.)

There is nothing more a part of a "connected life" than ubiquitous Wi-Fi, so to discover the steps users can take to keep their Wi-Fi networks safe and as hack-proof as possible, I reached out to engineers at Luxul and Packedge, two highly regarded manufacturers of professional-grade networking components employed by many custom installers. Both companies offered similar suggestions, and these are six tips to keep your network more secure.

### Change Admin Password

The first step to securing your network is making sure no one can access the router and take control. Most devices ship with a generic, default password like "admin." To ensure no one can pirate your hardware, change your admin credentials to a complex password using special characters, numbers, and various cases.

### Use WPA2

Both companies stressed the need to use the latest Wi-Fi security encryption protocols developed by the Wi-Fi Alliance, WPA2. Standing for Wi-Fi Protected Access, this offers the most robust encryption to thwart unwanted browsers from joining your network. While nearly all modern connected devices (TVs, Blu-ray players, A/V receivers, thermostats, etc.) support WPA2, older devices may not, and even a single device connecting with an older, unsecure encryption like WEP can render the whole network vulnerable. Update or replace those older items.

### Choose a Strong Password

Choosing a strong login password is the best way to keep even a determined hacker out. Packedge suggested using a memorable or funny phrase, something 15 or more characters long that utilizes a combination of different letters, numbers, symbols, and cases, like "iL0ve2W@tc#\$t@Rw&r\$".

### Hide Network's SSID

While this won't prevent hackers from finding your network with a Wi-Fi discovery tool, it makes it tougher for the average person to see your network and try to bogart some free Wi-Fi. Almost every Wi-Fi router or WAP lets you disable the broadcasting of your Wi-Fi network's SSID (e.g., "Smith House") making it tougher to locate and connect.

### Keep Firmware Updated

As security vulnerabilities are discovered, network hardware manufacturers often issue patches or firmware updates to address and correct these issues. Ideally your hardware would have an auto update feature that will routinely check and update on its own, but if not, check periodically to ensure you have the latest version(s) installed.

## You need to safeguard and secure your home's Wi-Fi network.

### Create a Proper Guest Network

With a guest network, you can give your visitors access to your Wi-Fi but with a separate pass phrase that won't compromise—or be as complex—as your main login. Also, a proper guest network will use a separate subnet, meaning guests will only have access to the Internet and not to items on your network like your hard drives, data files, or automation components.

While both companies admitted there is no such thing as a hack-proof network, they stressed you can make it *very* difficult for an outsider to break in. And hopefully in that time, you or a neighbor would notice a loitering weirdo sitting in front of your house in a van with an antenna and a laptop.

*Many thanks to Packedge and Luxul for their help and information for this column!*

## Audeze EL-8 Closed-Back Headphone

By Steve Guttenberg

# Close Encounters of the Audiophile Kind

**PRICE \$699**

**I'VE REVIEWED** A LOT OF headphones, but I've never encountered anything quite like the Audeze EL-8 before. It's the first high-end planar magnetic headphone to come alive and sound fully transparent with portable music players. Now, sure, we've heard similar claims for other high-performance, full-size headphones; and yes, they play, but too much of the headphone's potential is forfeited with portable devices. The EL-8 sounds scary good with my humble little iPod classic.

Audeze makes

### AT A GLANCE

#### + Plus

- High-resolution sound
- Planar magnetic drivers
- Made in the U.S.

#### - Minus

- Lacks mic and phone controls

nothing but planar magnetic headphones. The technology differs

from more conventional dynamic headphone driver designs

because, rather than use a voice coil to move the driver from the edge

or middle of the diaphragm, Audeze's patent-pending Fluxor driver's voice coil is distributed over most of the driver's surface, and Neodymium bar magnets are positioned to maximize flux density relative to the voice coil's straight traces to keep distortion low. Audeze's Fazor acoustic lenses in front of the drivers are said to improve high-frequency extension, lower distortion, and produce better imaging. The EL-8 planar driver is also a lot bigger than most dynamic drivers, at 100mm in diameter.

The EL-8 is still a good deal smaller, lighter, and more sleekly designed than Audeze's flagship LCD series headphones. Build quality feels positively robust. The EL-8's metal headband, ear cups, and yokes are beautifully finished, and the ear cushions and headband's ample padding ensures comfort. The EL-8 is a true circumaural design, and the large ear cushions really do completely cover my ears. There are two EL-8 models: closed- and open-back. I had the closed 'phone, which blocks out a good amount of external noise. The only real design missteps are the proprietary connectors on the ear cups that limit cable-swapping options. The EL-8 comes with a 6.5-foot cable terminated with a 3.5mm plug; a 6.3mm adaptor is included.

The EL-8 is more sensitive than most planar magnetic designs, so I found a lot to like about its sound plugged into my iPod classic, and I devoted a fair amount of time getting to know this headphone while grooving to standard-resolution lossless files. Even so, resolution and clarity were never in doubt. The EL-8 delivers inner details, the real subtle stuff running through Ry Cooder's *Paris, Texas* soundtrack album. It's mostly Cooder all by his lonesome on guitar bathed in a deep reverberant field. Bona-fide audiophile recordings that forgo dynamic range compres-

### RATING

#### Audeze EL-8 Closed-Back Headphone

Performance ★★★★★  
Build Quality ★★★★★  
Comfort ★★★★★  
Value ★★★★★

### THE VERDICT

**The Audeze EL-8** may be the first planar magnetic headphone sensitive enough to come alive with portable music players.

sion, like Dick Hyman's *From the Age of Swing* were fully liberated by the EL-8s.

Things were going so well, I wanted to try a better music player, but one that didn't break the bank, so I hooked up the brand-new \$199 FiiO X3 Gen2 and compared it with the iPod classic. It was no contest: The tiny FiiO smoked the iPod! So yes, there's room for improvement, but the iPod solo or your iPhone will positively shine with the EL-8.

Next, I compared the EL-8 with an Audeze LCD series headphone: the latest version of the \$995 LCD 2. For these auditions, I used Audeze's new Deckard home headphone amp, and the first thing I noted was how open the EL-8 sounds, though it's still not as spacious as the open-back LCD 2 (the EL-8 Open-Back is better than the EL-8 Closed-Back I'm reviewing in that regard). In any case, the LCD 2 had a sweeter, more laid-back presentation, while the EL-8 was more immediate and clear. Planar headphones are known for their outstanding bass potency and definition, and both Audezes delivered the goods.

Audeze is definitely upping the ante. With the EL-8, they've brought out their lightest, most comfortable, best looking, easiest to drive, most affordable, made-in-the-U.S. headphone, and maintained Audeze's signature sound. Well done!

### SPECS

**Type:** Over-the-ear • **Driver Type/Size:** Planar magnetic, 100mm • **Impedance:** 30 ohms • **Sensitivity:** 100 dB/1mW





# Bowers & Wilkins

## Sounds beautiful

With the new CM Series, beauty is so much more than skin deep. Of course, with their clean lines and high-quality finishes these are some of the most elegant speakers we've ever produced. But thanks to our Decoupled Double Domes and tweeter-on-top technology you won't believe how beautiful your music can sound.

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## Surround Soundings



**The foam surround on my Velodyne f-1200 subwoofer has disintegrated. I wanted to have it repaired with a rubber surround, but the guy at the speaker repair shop advised against that. Is there any benefit to using foam instead of a rubber surround when repairing a subwoofer driver?**

*Pete Gibson / via e-mail*

Not really. While a rubber surround ultimately might be more durable, from a sound quality perspective, it would be better to stick with the same material used in your sub's original driver design. The response of a repaired driver will never be identical to that of the original, so using replacement parts as close as possible to what the designer intended is usually best. Such repairs are fairly common for older speaker/subwoofer drivers, and replacement surrounds are available for a wide range of brands extending back several decades. Also, it's likely that the replacement surround will be comprised of a newer foam formulation that will be more UV resistant and last substantially longer than the original one, making longevity a nonissue.

**How would I go about setting up multiple surround speakers in the same channel—two side left and two side right speakers, for example—as in a commercial movie theater?**

**One more question: If I used a Y splitter and additional amplifiers to**

**Should I get a foam or rubber surround for my sub's driver?**

**power the speakers, could I still employ Audyssey processing to calibrate the speakers? I am planning to build a home theater with two to three rows of seating.**

*William Lee / via e-mail*

When asked a similar question on the Ask Audyssey forum [<https://audyssey.zendesk.com/home>], Audyssey founder and CTO Chris Kyriakakis confirmed that Y-cordding surround channels to duplicate surround

signals was perfectly acceptable since movie theaters use the same method to distribute uniform ambient sound throughout a large space. His only concern regarding Audyssey calibration in such scenarios was that the surround speakers be in line with each separate seating row. He additionally suggested that the microphone should be placed at ear level for each row during calibration, particularly if your theater uses tiered seating.

Since you're planning on building out a new theater, however, I'd be remiss if I didn't recommend considering a Dolby Atmos installation with in-ceiling or on-ceiling top speakers. Object-based surround seems to be the future of multichannel audio, and with Atmos-compatible gear now rolling out, your timing is good to get in on the action.

**Most multichannel speaker configurations I see advertised have large L/R tower speakers combined with smaller center and surround speakers. It seems to me, however, that money invested in large (mostly full-range) L/R towers would be wasted if you care more about multichannel movie soundtracks than two-channel stereo music. Given the conventional wisdom that movie soundtracks rely heavily on the center channel for dialogue reproduction, shouldn't you buy a higher-performing center speaker instead of big front towers?**

*Rick James Boettger / via e-mail*

Not necessarily. The center speaker in your system should ideally match the left/right channel speakers when it comes to timbre, output capability, and other performance criteria. As for tower speakers in a multichannel speaker configuration, plenty of audio experts maintain that satellite/subwoofer combinations are superior to tower speakers when it comes to bass reproduction. Why? When using a separate sub, you get the option to position it in a room location that provides the best bass response. Also, powered subwoofers typically have higher output capabilities than the bass drivers in tower speakers. Last, since bass frequencies place substantial demands on your amplifier or receiver, delegating bass-handling tasks to a dedicated subwoofer will extend more headroom to the other channels in your system.

## Speaker Celebrity Rides New Steed

British loudspeaker designer Andrew Jones achieved celebrity status by serving two seemingly opposed needs in the audio industry. He pushed the envelope of cost-no-object audio with his speaker and amp designs for California-based TAD Labs. But at the same time, in his work for Pioneer, he established a new state of the art in affordable speaker designs for mass-market retail channels. So the fact that he has moved from TAD and Pioneer into a new relationship with the European company ELAC is major news.

ELAC Electroacoustic GmbH of Kiel, Germany is an 89-year-old manufacturer best remembered in the U.S. for having sold Miracord turntables in the 1970s and '80s. After focusing on its European business for a few decades, ELAC is planning a return to North America with a speaker line designed by none other than Andrew Jones. The initial offering will be the Debut Series, the kind of real-world speakers Jones pioneered for Pioneer. That will be followed by a "reference class" line more akin to his work for TAD (Technical Audio Devices).

The Debut Series will hit stores by the end of the summer and will include eight models including monitor, tower, center, and Dolby Atmos-enabled speakers, pricing unknown at press time. Will Jones's new affordable speakers use concentric drivers like his final work (and first Atmos speakers) for Pioneer? Will his subsequent reference speakers use folded ribbon tweeters like ELAC's existing speaker lines? We can't wait to find out!

What we're pretty sure of right now is that two sets of Andrew Jones products have earned five-star spots on our current Top Picks list. The first is a \$500 speaker system based on the Pioneer SP-PK22BS monitor (preceded by the almost equally good SP-BS41-LR). It was soon followed by a \$2,500 Atmos system based on the Pioneer Elite SP-EBS73-LR. These are easily among the best speakers you can buy at these prices.

The latest Andrew Jones speakers could be the start—no, the continuation—of something big.—MF







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## Gunfight at the 4K Corral



Tombstone, Arizona Territory. October 26, 1881. It is a Wednesday, around 3:00 p.m. In a

vacant lot adjacent to the O.K. Corral, four lawmen including Wyatt Earp and Doc Holliday square off against five outlaws. Within 30 seconds, 30 shots are fired. When the gun smoke clears, three men lie on the ground, wounded. And three men lie on the ground, dead. Only Wyatt Earp walks away without a scratch. A Wild West legend is born.

Now, another fight has broken out, this time involving 4K video. Resolution of this dispute will take considerably longer than half a minute. It will proceed in an orderly, attorney-like time frame. But for sure, there will be a price to pay.

You own lots of cool stuff. Cool stuff like a stereo, television, and phone. But much of the technology inside that stuff, that is, the intellectual property, is owned by someone else. They invented it and most likely pat-

data-hungry technologies such as 4K UHD and eventually, 8K.

And one of the key compression technologies is High Efficiency Video Coding (commonly known as HEVC or H.265); that standard brings together many patents, owned by diverse patent holders. HEVC can be used for 4K products such as televisions, Blu-ray players, streaming services, and smartphones. Last year, licensing group MPEG LA said it would make available a pool of HEVC patents, much as it had with H.264/AVC, covering some 4,000 patents. That is a good thing; patent pools provide an excellent way for companies to navigate extremely complex IP issues.

Now, HEVC Advance, a new patent-licensing group, has announced that it also intends to license HEVC compression technology with its own patent pool. Further, it claims that some major patent holders have not signed on to MPEG LA. In particular, it represents licensors such as GE, Dolby, Philips, Mitsubishi Electric, and Technicolor (accounting for 500 patents) with more to follow.

It's possible that the new pool could be blended with existing agreements and the rollout of new products would proceed smoothly. But the existence of two HEVC patent pools could also complicate things and delay both content and hardware. For starters, HEVC Advance hasn't yet disclosed its licensing terms. Throw in some patent-infringement lawsuits, and you might be looking at some serious speed bumps for 4K Ultra HDTV and Ultra HD Blu-ray.

Adding to the confusion is the fact that Google owns the rival VP9 compression, and makes it available royalty-free. In any case, with three parties involved—two opposing patent pools, and a wild card technology—any company interested in promoting next-gen 4K, considering the unresolved legal risks, will have to slow down and be very cautious about proceeding. More specifically, you'd rather hire a small team of lawyers now, rather than an entire law firm later.

Three fresh graves were dug in Boothill Graveyard that day. Hopefully the 4K fight will not have any fatalities, but it's hard to tell. The shooting has just begun.

### Will there be fatalities in the 4K fight?

ented it, so they own it. At least until the patent expires and the IP becomes public domain, most patent holders want to get paid for their work. That's not an unreasonable request, given the high cost of inventing cool stuff.

4K video is certainly no exception to that rule. Every 4K product embodies thousands of patents, and when you buy a 4K product, part of the cost pays for the licenses to use that IP. Some of the most crucial patents involve the compression algorithms that allow all those bits to move through reasonably small pipes and fit on reasonably small discs. High-quality compression will be even more crucial as we move into newer, more

## Vizio Has a Dolby Vision

There's a lot more to Ultra HD than just higher resolution. Other picture parameters need work too. That's why Vizio's latest vision is Dolby Vision. The technology, licensed from Dolby Laboratories, infuses video content with HDR (high dynamic range) decoding to widen contrast and expand color gamut.

Vizio's embrace of Dolby Vision coincides with a desire to market TVs at higher price points. The first Reference Series sets will include the R120, which reportedly will have a 120-inch picture and weigh 365 pounds. There will also be a 65-inch RS 65 model. Pricing was unavailable at press time. The sets will include 10-bit panels and full-array backlighting with 384 active LED zones for the R65 and an as-yet-unspecified number for the R120. Other features include 802.11ac dual-band Wi-Fi, and five HDMI 2.0 ports—which can be upgraded to HDMI 2.0a—with UHD-friendly HDCP 2.2 DRM. Dolby Vision content will be streamed through the built-in Vudu app. Vudu will release a handful of Warner titles this year.

In related news, Dolby Vision HDR and Dolby Atmos object-oriented surround are also components of Dolby Cinema, a package of theatrical technologies that AMC is adopting for its AMC Prime moviehouses. The Dolby Vision-enhanced dual 4K laser projectors go “far beyond the dynamic range of any film system,” says Dolby cinema executive Doug Darrow. Theaters in Los Angeles, Atlanta, Houston, and Kansas City made their Dolby Cinema debuts in May, and a total of 100 are expected by 2024.—MF



## UHD Thumbs a Ride

Ultra HD content on a thumb drive? Sure, why not? Mance Media is the first company to sell it—and that makes it the first to sell UHD in a hard-copy format. The Website lists more than a dozen movies priced at \$24.99 as well as TV shows. For details, see <http://buy4kuhd.com>. UHD will also be available on forthcoming variations of Blu-ray and is already available via streaming and satellite.—MF





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## The IMDb at 25



When Col Needham, creator of the Internet Movie Database, visited *Video* in November 1998 as the magazine was transitioning into *S&V*, the IMDb was already eight years old and had just been acquired by Amazon. Though most users had to perch in front of a PC with dial-up, the site was already the go-to place to research, for instance, the synopsis and credits for *Dark City*, which came out that year. Mostly text-based, the IMDb's claim to fame among videophiles was its comprehensiveness and hyperlinks that easily let you find actress Jennifer Connelly's other movies or learn that Alex Proyas had previously directed *The Crow*.

When the IMDb turns 25 in October, both its database and popularity will have multiplied exponentially. The IMDb consumer site (imdb.com) currently lists more than 3 million movies and TV shows and more than 6 million cast and crew members. It has a combined Web and mobile audience exceeding 200 million unique monthly visitors.

As Internet usage has shifted to

**As Internet usage has shifted to handheld screens, so goes the IMDb.**

handheld screens, so goes the IMDb. E-mailing from the Cannes Film Festival, Emily Glassman, head of PR & Original Content at IMDb.com, declared, "More than 50 percent of our traffic now comes from mobile devices, which is a trend we expect will continue."

The IMDb's portfolio of entertainment apps includes its Movies & TV app for iPhone, iPad, Kindle Fire, Android phones, Android tablets, and its mobile-optimized Website. "To date, there have been more than 115 million downloads of IMDb's mobile apps worldwide," she says.

Amazon founder Jeff Bezos's bet on the IMDb has paid off big time. Where once he could sell you the DVD of a movie that you had taken the trouble to look up, he can now sell you the Amazon Instant Video. And even before you watch a trailer, he can make you sit through another commercial



he's sold to an advertiser. And if you're in the industry and need the name of an actor's agent, he can make you subscribe to IMDb Pro. It's good to be the number-one movie Website in the world.

Streaming video, unfeasible before broadband, is now an IMDb staple. And the IMDb is not just about movies anymore. It's about TV too. As the networks' upfront presentations about the fall season rolled out to potential advertisers in May, the IMDb showed us what we'll be watching and provided the details the networks' own sites often lacked.

In perusing the IMDb app on my iPad, I was drawn to a tile showing a naked, tattooed woman in a show called *Blindspot*. I needed to know more about the actress, Jamie Alexander. She had previously appeared in two *Thor* movies. I streamed *Blindspot*'s video promo, admiring the 5' 9" actress's slick fighting skills against Chinese thugs. I learned the name of *Blindspot*'s fight coordinator and checked out other flicks he had choreographed.

Too much information? If you prefer the bird's-eye view of the new TV season, 29 screen swipes will do: an image, a caption, next! As always with the IMDb, you can go deep and wide or just skim the cream.

According to Glassman, the goal of the mobile apps' iOS and Android updates in April was to make it easier for users to discover and engage with videos (such as clips, interviews, trailers, and short features). And the TV series page now features information on season premieres and other tune-in-related content.

It's a far cry from the days when we consulted a paperback like *Leonard Maltin's Movie Guide* to settle an argument. Today, you simply whip out your smartphone.

## Evil Frank Shot in 6K

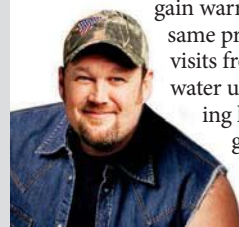
If you thought President Francis Underwood was scary in Netflix 4K streaming, you may be perturbed to learn that the third season of *House of Cards* was actually shot in 6K. When Kevin Spacey directed his laser-like gaze at the camera to address the audience, he was burning a hole in a 6K lens. Even the visual effects—often executed in 2K even for 4K productions—were pure 6K, which has nine times the resolution of standard HD. That doesn't mean you'll be seeing the show in 6K anytime soon, with TVs and program pipelines still grappling with the 4K transition. But the 6K *House of Cards* lurks in an archive, waiting to unnerve future generations. —MF



## The FBI Is Not the Cable Guy

Is that really the cable guy on your doorstep or the FBI? A Las Vegas gambling ring found out the hard way when it answered a knock at their hotel room door, were told their Internet service needed fixing, and agents searched the premises. The government said in federal court that the ruse was legal, but the judge begged to differ: "Authorities would need only to disrupt phone, Internet, cable, or other 'nonessential' service and then pose as technicians to

gain warrantless entry." The same prohibition applies to visits from supposed gas or water utility workers addressing life-threatening emergencies because their entry involves "involuntary consent." —MF





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# New Gear

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## ◆ Line 6 Amplifi TT Guitar Tone Processor

If you're one of the many A/V geeks who likes to do a little shredding in your spare time, here's a first-of-its-kind gizmo that's worth checking out: The Amplifi TT guitar tone processor turns any speaker system in to a guitar amp with Bluetooth streaming that mixes in guitar and amp sounds. Connect the TT to your stereo and see if you can keep up with Zakk Wylde. **Pick a Sound:** Best of all, when you launch the Amplifi app (iOS and Android), you can pull up a guitar sound that matches Wylde's from a database in the cloud, select from more than 200 amp tones and effects, or create your own sound. Jam on. **Price:** \$200 (on musiciansfriend.com)

Line 6 • (818) 575-3600 • line6.com



## ◆ Episode Signature 1700 Series In-Wall/Ceiling Speakers

Don't bother looking for Episode speakers in your local electronics store or online for that matter—you won't find 'em. The nine models in the new super-secret Signature 1700 Series are available only through custom A/V installers. As company founder Jay Faison puts it, "Performance isn't just about the product. It's about placement, installation, and integration with other components." Designed with home theater in mind, the line includes five in-ceiling and four in-wall models featuring 6- or 8-inch Nomex-reinforced fiberglass woofers, adjustable titanium-dome tweeters, and a thin-bezel design with a paintable magnetic grille for a near invisible minimalist look.

**Satisfaction Guaranteed:** Episode's lifetime warranty covers parts and labor on speakers found to be defective. Prices range from \$330 to \$500 each.

**Episode • (866) 424-4489 •**  
episodespeakers.com



## ◆ JBL Control X Wireless Speaker

If you haven't gotten around to getting speakers for your patio, now's the time. And if you do decide to bring the show outside, why mess with wires? Designed for use indoors or outdoors, the Control X Wireless supports Bluetooth streaming and is said to play for up to 4 hours when its battery is fully charged. Its enclosure is weatherized to protect the 5.25-inch woofer, 1-inch tweeter, and 60-watt amp within, and there's a boundary compensation switch for when the speaker is placed on or near a wall. **Four Play:** Want to serenade a large area? One Bluetooth stream can feed two pairs of speakers without additional wires. Available in graphite, red, and white. **Price:** \$500/pair (\$300/pair for the non-powered Control X wired model)

**JBL • (800) 336-4525 • jbl.com**







#### ◆ **Sony XBR-65X930C 65-Inch Ultra HDTV**

Videophile dreams of true-to-life brightness can come true with the XBR-65X930C, one of the first Ultra HD televisions to support (via a future firmware update) the high-dynamic-range (HDR) content Hollywood plans to start delivering later this year. The Android-based TV facilitates phone-to-big-screen casting, voice search via the remote control, and easy access to content from Netflix, YouTube, Hulu, and many other apps. **Triple Threat:** The combination of Sony's new X1 4K engine, X-tended Dynamic Range processing, and X-Reality Pro upscaling is said to enhance the color, contrast, and clarity of any source, while support for hi-res audio formats and oversized speakers produce sound that is better than most TVs. Gamers have not been forgotten: PlayStation 3 games can be streamed directly to the TV. **Price:** \$4,500

**Sony • (877) 865-7669 • [sony.com](http://sony.com)**

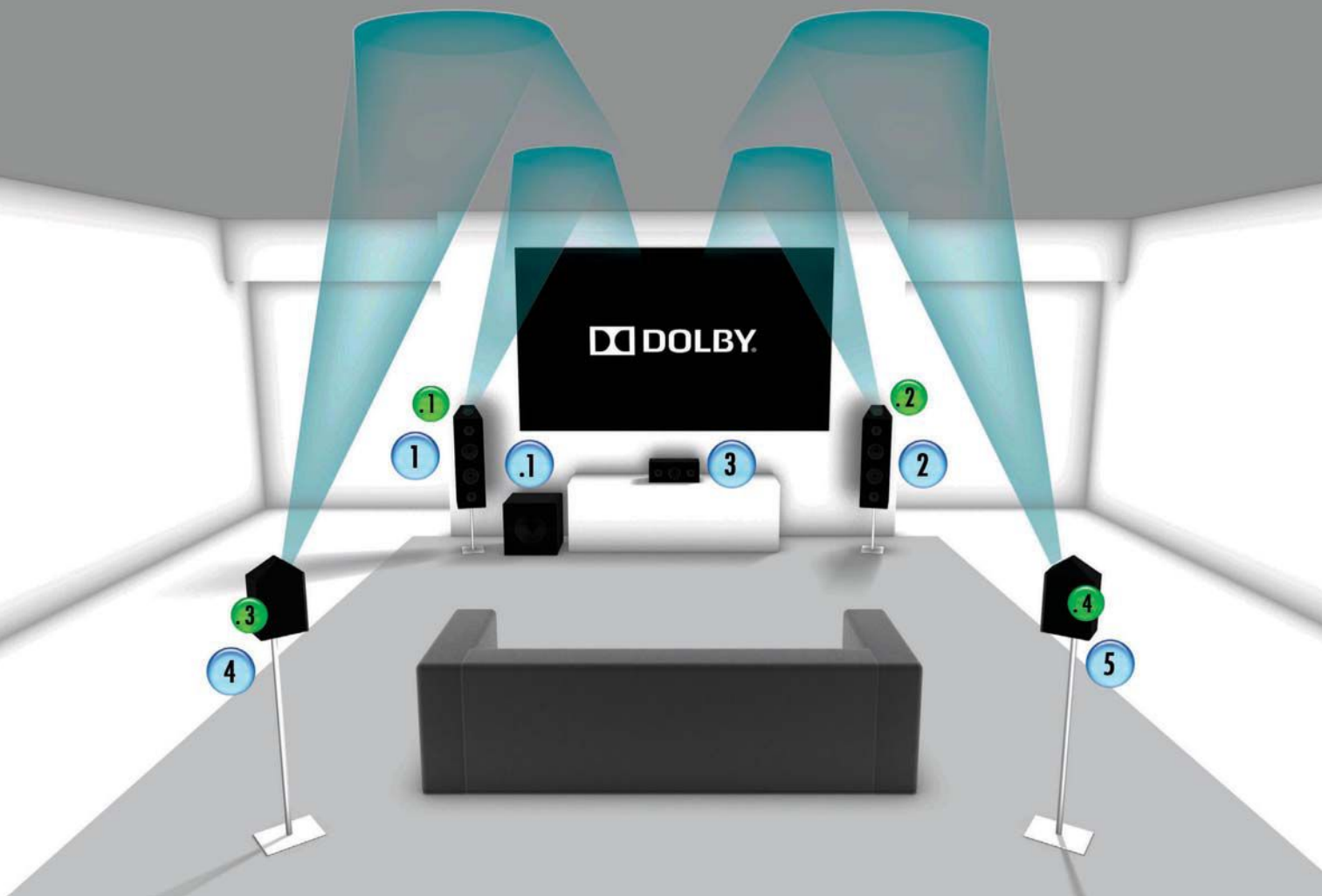
#### ◆ **Yamaha RX-V379 A/V Receiver**

Not only does the entry-level RX-V379 provide 4K/60p passthrough with High-bandwidth Digital Content Protection (HDCP 2.2), but it may be the least expensive AVR to offer this critical feature—critical, that is, if you're interested in streaming 4K/UHD content (and who isn't?). **Loaded:** The 5x100-watt receiver is packed with goodies, including Bluetooth streaming with signal processing said to enhance compressed music files, automatic speaker calibration, a subwoofer trim control, four HDMI inputs, a redesigned large-button remote, and one-touch Scene buttons that power up a second component (think Blu-ray player) and select input and DSP mode. The RX-V379 also has a Virtual Cinema Front mode that lets space-challenged listeners put all five speakers in the front of the room and still experience virtual surround sound. Weird but cool.

**Price:** \$300

**Yamaha • (714) 522-9105 • [usa.yamaha.com](http://usa.yamaha.com)**





● Dolby's diagram shows the height channels in a 5.1.4 Atmos-enabled setup.

# Dolby Atmos vs. Dolby Atmos

Two in the ceiling or four on the floor? **By Darryl Wilkinson**



Dolby Atmos, for you members of the unwashed and uninformed masses (yeah, you know who you are), enables film sound designers to treat individual sonic elements as virtual “objects” that can be placed and moved almost anywhere within the three-dimensional space of a movie theater. Two things are important about its adaptation for home theater. First, the soundfield—in its original, discretely encoded version, not an extrapolated one—is no longer limited to a two-dimensional plane circling around your

ears. The Atmos mix of a movie adds the dimension of height, which means that sound effects can now seem to move anywhere within the space that's head height or above, including directly over you. Second, each Atmos object is defined by metadata in the soundtrack that describes its position at any given time, which allows an Atmos-equipped A/V receiver or preamp/processor to render best-fit playback based on the number of speaker channels supported in a particular home theater, whether it's 7, 9, 11, or perhaps (and preferably) even more.

For those who've already heard it, Atmos is a significantly uplifting and highly noticeable enhancement over the standard way of doing surround. (Saying it's the height of movie sound could be a bit over the top, but only if you don't like puns.) So what's the best way to add Atmos to your home theater?

## Going Atmos

Of course, you'll need to make some changes to your home theater (in other words, spend some money) to accommodate Atmos. The good news is that your current Blu-ray player





● InCeiling Bronze/8 speaker from Triad.

## Is Your Room NSFC (Not Suitable for Ceiling)?

Dolby recommends using in-ceiling or on-ceiling speakers for the overhead or height channels in most rooms. With no proprietary requirements, you can use any standard, off-the-shelf models, as long as they're full range down to 180 Hz or so, have enough output capability, and have wide dispersion. They should tonally match your main speakers as closely as possible, too. On-ceiling speakers pointing straight towards the floor, perhaps small bookshelf or globe

speakers, or thin on-wall-

style models, are a functional option—though, as with in-ceiling speakers, they'll require the hiding of cables behind the ceiling for a clean installation.

There will be cases where ceiling speakers aren't appropriate, though, because: 1) you don't want to install ceiling speakers; 2) you can't install ceiling speakers in the optimum locations; 3) you've gone feral and live in a cave with a friendly Sasquatch family; or 4) you're opposed to ceiling speakers on moral grounds. Regardless, Dolby has another option: Atmos-enabled speakers, which include angled, upward-firing drivers designed to bounce the height channel's sound off the ceiling and toward the listener. At the moment, companies including Atlantic Technology, Definitive Technology, KEF, Onkyo, and Klipsch make Atmos-enabled *add-on* speakers that sit on top of your current speakers. Klipsch also makes Atmos-enabled combo speakers with integrated Atmos elevation modules, as do Pioneer and Triad. There will be more of both versions from other companies as time goes on.

Your choices of AVRs and pre/pros with

Atmos capabilities are good and growing. As of early June, there were at least 19 AVRs that either include Atmos out-of-the-box or are upgradeable via a firmware update, with the least expensive 7.1-channel models starting at \$600 list price. (There are deals to be had out there, too.) Brands currently offering Atmos AVRs include Onkyo, Pioneer, Pioneer Elite, Integra, Denon, Yamaha, and Marantz. You can get a pre/pro with Atmos from Onkyo, Integra, Marantz, Steinway Lyngdorf, and Trinnov, but you'll need to budget a little more for one of these because they start around \$2,500—and remember, you'll need additional channels of amplification for the overhead channels as well. If you're on a really tight budget, Onkyo has a couple of home-theaters-in-a-box with limited Atmos capabilities, which you can snag for something in the range of \$900 to \$1,200.

## Where Are the Atmos Blu-rays?

Once you have the hardware, what are you going to watch? By the end of this year, more than 160 movies will have been mixed in Dolby Atmos. That's great—for the movie theater-goers. But as I write this in early June, there are only eight Blu-ray movies that include an Atmos soundtrack. OK, nine if you count *The Expendables 3* as a movie. Ten if you throw in Dolby's demo disc. (I'm only counting Region 1 BDs here, by the way.) Bizarrely, none of the discs (except for the demo) touts the Atmos soundtrack on its cover. You have to look for the tiny Dolby Atmos logo or find Atmos mentioned in the miniature type of the feature listing. Surely—please, pretty please?—by the time you read this, there'll be at least a few more Atmos-encoded discs on the market.

You don't need a new BD player (or new HDMI cables, thank goodness) because Dolby developed a new algorithm and new extensions for Dolby TrueHD and Dolby Digital Plus to include the Atmos encoding while retaining backwards compatibility with non-Atmos gear. A lot of streaming video services use Dolby Digital Plus, which means you can look forward to being able to stream movies with Atmos soundtracks. As a matter of fact, Dolby says that Vudu and Amazon intend to start streaming Atmos-encoded

will most likely be totally compatible if it's reasonably modern. The less-than-good news is that you'll have to add or replace at least two—but preferably four—speakers. (You were probably thinking you needed more speakers anyway, right?) The not-good-at-all news is that your existing AVR or pre/pro will likely have to be replaced with one that includes Atmos processing (though some 2014 models are upgradeable now via firmware).

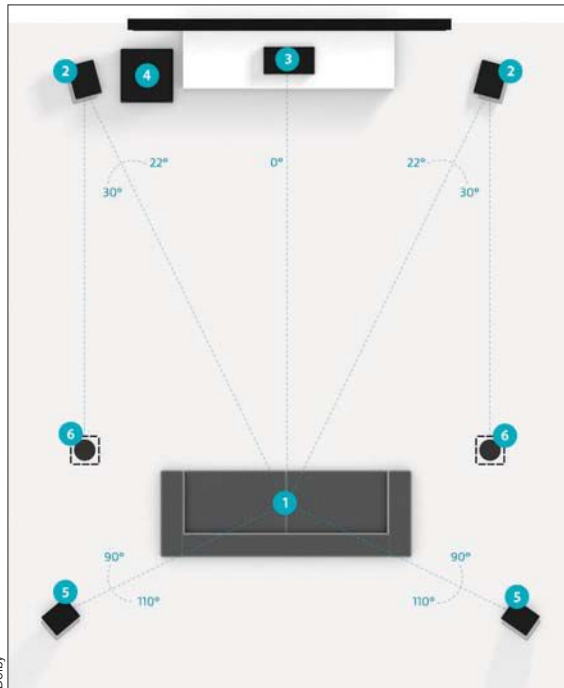
The additional speakers are the ones that will re-create the "overhead" sound. At a minimum, you'll need two of these height speakers in the front part of the room. Dolby highly recommends using a second pair of height speakers to extend the effect to the back of the room.

A quick side note on nomenclature: The number of Atmos height speakers a system uses is tacked onto the end of the traditional 5.1 or 7.1 (etc.) designation. Therefore, a 5.1-channel system with two front height speakers is written as 5.1.2 to denote the five traditional core channels (front left/right, center, surround left/right) plus a subwoofer (the .1), plus two height speakers (the .2). You'll need at least seven channels of amplification (*i.e.*, a 7.1-channel receiver or a seven-channel power amp) to drive everything in a 5.1.2 system but the (likely) powered subwoofer. If you add another pair of height speakers to the back of that system, it's now a 5.1.4 system, with the need for two more channels of amplification. Likewise for 7.1-and-up systems. Atmos is incredibly flexible, by the way. It'll handle playback through systems with up to 24 discrete floor (roughly ear-height) speakers, along with up to 10 overhead speakers. In other words, 24.1.10, which is starting to look like an IP address rather than a home theater description.

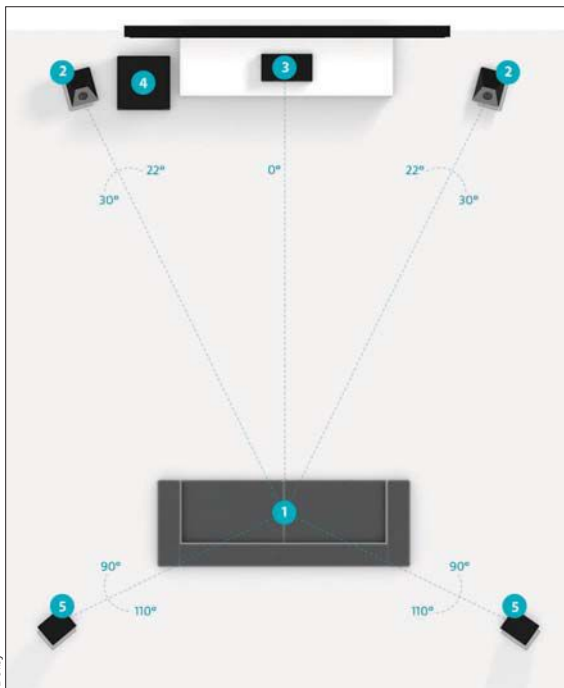
## ● Yamaha's Atmos-enabled RX-A2040 AVR



# Dolby Atmos vs. Dolby Atmos



● A 5.1.2 Atmos setup with left and right ceiling speakers (number 6 on diagram).



● Another 5.1.2 Atmos setup, this one with left and right Atmos-enabled speakers (number 2 on diagram).

movies; when that's going to happen, however, hasn't been announced yet. Go online now, and the only Atmos items you can stream or download from either provider are Dolby demo clips. (Yeah, baby, demo clips!)

## Go Take a Height

Dolby has fairly specific guidelines concern-

ing when to use in-ceiling or Atmos-enabled speakers, as well as where to install or place whichever type of speaker you use. If you're upgrading your system yourself, download Dolby's white papers on Atmos. (Search for "Atmos Home Theater Installation Guide.") They include lots of very informative diagrams showing recommended angles, layouts, and install positions. In the meantime, I'll quickly talk you through the basics.

To begin with, unlike a speaker system's center and surround back channels, Atmos speakers are always added in pairs. If you're only able to use one pair of overhead speakers, they should always be used for the front overhead channels. It's OK to mix speaker types, if appropriate, by using a pair of ceiling speakers for the front overheads and a pair of Atmos-enabled up-firing speakers for the rear overheads—or vice versa. (Mixing left and right speaker types, on the other hand, is very, very not OK.) Note that your AVR or pre/pro will send a somewhat different signal to your ceiling speakers or Atmos-enabled elevation modules depending on the type used, to ensure they provide the optimum effect.

In an average room with a typical 8- to 14-foot-high ceiling, Dolby says the preferred setup uses ceiling speakers. In a four-overhead-speaker setup, you'd install the front pair of ceiling speakers between the listener and screen, and place the rear ceiling speakers slightly behind the listener. In a system with only two overhead speakers, you'll mount them in the front of the room, but ideally in somewhat closer proximity to the listener than if you had two pairs of height speakers (see diagrams). For most speakers that have a reasonably wide dispersion pattern, they should be firing straight down.

But if you're stuck using speakers designed with a more narrow dispersion pattern, and they feature "aimable" drivers, Dolby recommends directing them at the listener. The locations of the remaining listener-level speakers in a 5.1.4, 7.1.4, or 9.1.4 system stay roughly the same.

When you use Atmos-enabled combo

speakers or Atmos-enabled add-on modules, speaker placement is nearly identical to the standard arrangements for 5.1, 7.1, and so on, though if your existing surrounds are mounted much above ear level, you may want to consider lowering them a bit to ensure enough distinction between side/back and ceiling effects. The front left and right Atmos-enabled speakers simply replace your current front speakers. When you use add-on modules, ideally they should be placed on top of the existing front speakers. The back pair of Atmos-enabled combo speakers (or add-on elevation modules) for a 5.1.4 system should replace (or sit on top of) your original in-room surround speakers. In 7.1.4 and 9.1.4 systems, the Atmos speakers (or modules) should replace (or sit on top of) the surround back speakers.

Confused? Don't sweat it, because now we're going to move on to the less-convoluted topic of the equipment I used.

## Atmos.2 or Atmos.4?

As I've mentioned, Dolby says using ceiling speakers is the preferred setup—for most rooms. In some cases, they note, "experts" have found that Atmos-enabled speakers sound just as good. By virtue of the fact that there's essentially no labor involved in setting up Atmos speakers or add-on modules (other than running an extra set of speaker wires), it'll usually be cheaper and easier to go the in-room route, rather than the in-ceiling path. What we wanted to find out was just how audible the differences are among the various setups. How much surround sound or basic sound quality, if any, do you sacrifice if you use Atmos-enabled rather than ceiling speakers? For that matter, what's the difference between using only two front height speakers versus four? We also thought it would be cool to discover just how time-consuming and confusing it could be to compare all these variations.

Considering the fact that Atmos speaker systems can range from the most basic 5.1.2 configuration up to a room-filling 24.1.10 speakerpalooza, a person (as in me) could spend years testing the different configurations. Editor Rob Sabin knows I always turn my stuff in way past deadline, but even he wasn't comfortable with the thought that I'd take a year or two to complete the project. So we set our sights on something more reasonable and decided to compare the performance of four systems, using the following Atmos configurations: 1) 5.1.2, with just one pair of ceiling speakers in the front; 2) 5.1.2, with one pair of Atmos-enabled combo speakers in the front; 3) 5.1.4, with pairs of in-ceiling speakers in the front and rear; and 4) 5.1.4, with pairs of Atmos-enabled speakers in the front and rear. The thinking was that these are the most likely upgrades attainable by you, the dedicated, hard-working, budget-limited, and thoroughly obsessed *Sound & Vision* reader.



## Testing, Testing: 5.1.2, 5.1.4

After Mike Trei finished giving the Yamaha Aventure RX-A2040 A/V receiver a workout for his review in our May issue (also available at [soundandvision.com](http://soundandvision.com)), Rob had it shipped to me to use as the heart of these Dolby Atmos test systems. It's a \$1,700 AVR (one down from the 2014 top-of-the-line) with nine 140-watt channels—and an Atmos firmware update. In order to facilitate testing the differences between the ceiling and non-ceiling speaker configurations, Triad volunteered to provide two pair of the company's new Atmos-enabled InRoom Bronze LR-H monitors for use in the front and main surround positions, a matching InRoom Bronze Center for the center channel, four (yes, four) InWall Bronze/4 SlimSubs, and two pair of InCeiling Bronze/8 ceiling speakers that I could swap with the InRoom monitors. Since it's already compatible with Atmos, I used my Oppo BDP-105 Blu-ray player. Oh, yeah, I also worked the crap out of my trusty RadioShack analog sound pressure meter. (It's Atmos-compatible, too.)

Even if there had been tons of Atmos speakers on the market, it's still highly likely that we'd have chosen to use the Triad models listed above because the company makes a serious effort to design speakers within the same series (in this case, Bronze) to be as close as possible in tonal balance. The goal is that an InCeiling Bronze/8 should sound double-damn close to an InRoom Bronze Center or LCR, and all of those should sound likewise to the LR section of the InRoom Bronze LR-H (the "H" being the integrated Atmos-enabled elevation module). My experience with Triad in the past has borne this out, and in my opinion, they're one of the best speaker companies at regularly accomplishing this feat. And it's a feat that was important for these tests because we wanted to make sure that the differences we heard were the result of speaker placement and configuration, not significant discrepancies in tonal balance among the speakers. (In addition to this Atmos versus Atmos comparison, you'll find my review of a 5.1.4 system based on the InRoom Bronze LR-H monitor, on page 50.)

It may sound like a simple task, but switching from a 5.1.2 Atmos in-ceiling configuration to a 5.1.2 Atmos-enabled in-room system was, um, a bitch that involved much more than merely swapping speaker cables. (It was an even bigger hassle switching between the 5.1.4 arrangements.) Since Atmos playback rendering is done based on the number of speakers and their types, any layout or component changes had to be accounted for in the Yamaha AVR's less than smoothly intuitive speaker-setup menu. Distances and output levels had to be checked and adjusted each time, too (thus, the over-worked sound meter).

My home theater is 12 feet deep and 24 feet wide, with a typical 8-foot-high drywall ceiling. It's not quite an average room because

there are two sets of exposed beams on the ceiling and side walls that split the room lengthwise into thirds, so I couldn't always locate speakers—especially the ceiling ones—in the absolutely optimum, primo-of-primo spots. Fortunately, though, after cutting a couple of new holes for the ceiling speakers, I was able to stay within Dolby's recommended parameters.

I thought about adding acoustic treatment to the ceiling. Eric Smith, the founder of Auralex Acoustics, has spent a lot of time looking into how to properly treat a room to get the best performance out of an Atmos system—especially one with upward-firing Atmos-enabled speakers or add-on modules. He was extremely helpful in coming up with a plan of attack that would have included movable and/or removable acoustic panels for adjusting the acoustics based on the Atmos speaker type. In the end, though, I decided against using any special treatment in order to keep the results as close to what you'd get in the average living room or home theater.

### On a Knife's Edge

It would have been utterly insane to compare all four of the Atmos configurations using as many movie scenes as we usually do when reviewing a single piece of gear or one speaker system. I ended up choosing chapters 7 and 8 of *The Hunger Games: Mockingjay, Part 1*, along with chapter 11 of *Teenage Mutant Ninja Turtles*. The former selection has a nice mix of subtle and bold effects, while the latter has...well, let's just say there's nothing subtle about *Teenage Mutant Ninja Turtles*.

That said, whatever you think of the storyline, *TMNT* has one of the best examples of how cool Dolby Atmos can be. In chapter 11, when Splinter (a talking, mutant, ninja-master rat) fights Shredder (an evil ninja master wearing what looks like a ninja version of Iron Man's suit)—if you haven't seen the movie, just go with it—Shredder fires a series of knife blades through the air at Splinter. Splinter dodges the flying blades, and they get stuck in the wall behind him. Fortunately for Shredder, his suit magnetically draws the blades back to him. At this point, it just so happens that the listener is sitting between the blades and Shredder. With the Atmos-encoded soundtrack, the sounds of the blades don't pan from the front left speaker to the rear left. Instead, they seem to fly through the middle of the room, past your head. If you've ever seen a 3D movie where a snake head or a spear or something appears to come out of the screen toward your face, this is the aural equivalent



● Triad's InRoom Bronze LR-H speaker with an integrated elevation module.

of that experience—without the cheese factor.

How do I begin to describe the differences among the setups? In this case, the 5.1.4c system (with "c" being my unofficial shorthand for ceiling speakers) performed phenomenally. The blades, especially the last one or two, were so acoustically fully formed and solidly placed as they moved from the screen to the back of the room that I had the urge to duck out of the way. I'm not sure how to quantify a three-dimensional sound element—I now understand why Dolby refers to it as an "object"—but this had all the acoustical aspects of the real thing. In comparison, with the 5.1.2c system,

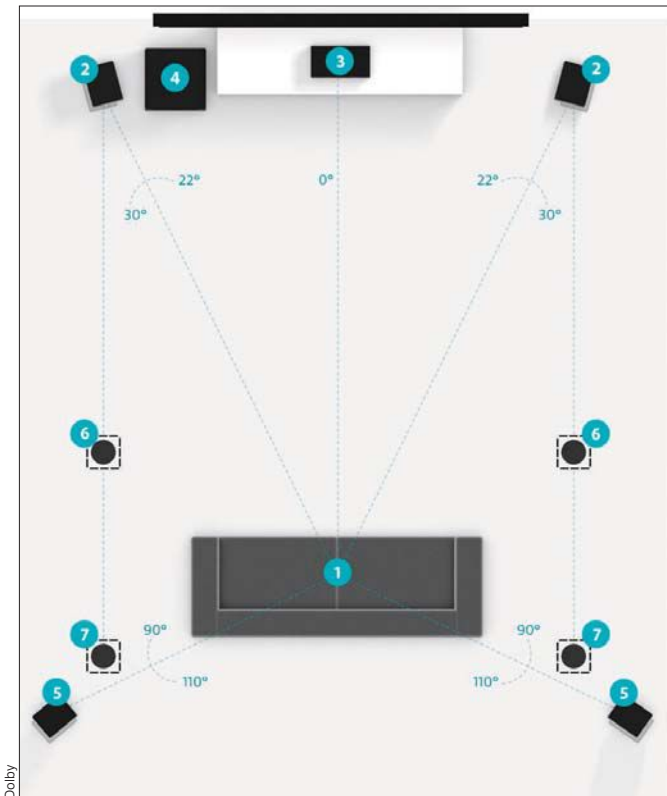
the blade was fully formed when it left the screen, but it seemed to dissipate slightly as it moved toward my head—and then it "disappeared." The 3D soundfield flattened when it reached my head. In terms of 3D-ness, it reminded me of the limitation common to a lot of soundbars, whose soundfield never extends past the listener.

Next, I switched to the 5.1.4e system (again, my unofficial shorthand, with "e" referring to Atmos-enabled speakers). As Dolby has predicted, it performed nearly as well as the 5.1.4c ceiling system in terms of acoustic 3D-ness. In fact, the knife blades were just as fully formed and moved through the air the same way. The main difference I heard was in the sharpness of the sonic image. Instead of having the surgically sharp edge, these blades "sounded" like they'd been used a couple of times. The 5.1.2e Atmos-enabled system had the same subtle characteristic, but as with the 5.1.2c system, the 3D soundfield dissipated abruptly.

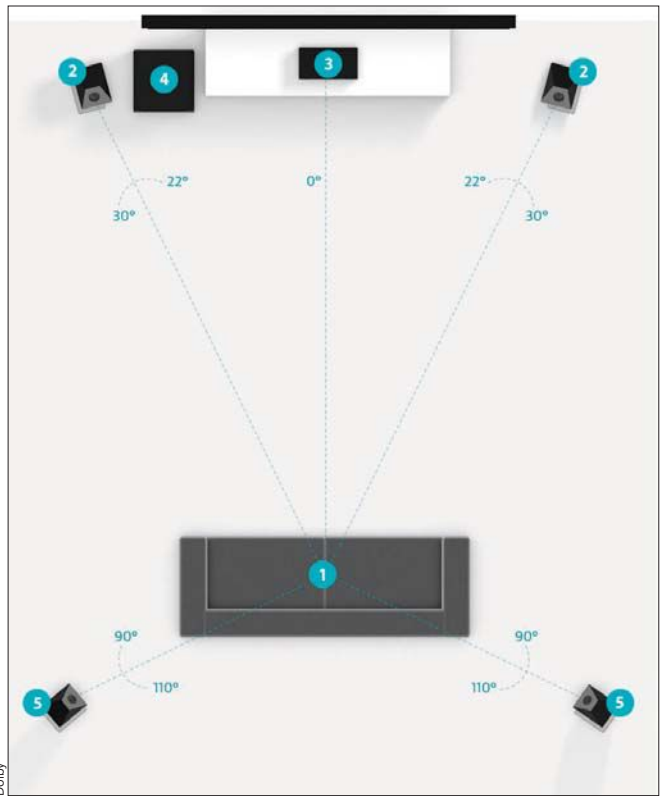
### How High Can It Fly?

My notes describing the number of noticeable differences among the systems during chapters 7 and 8 of *Mockingjay* were copious, but I'll keep it brief here. In the beginning of chapter 7, a hovercraft flies overhead and lands. With the 5.1.4c ceiling system, the swoop of the wind around the room during the landing was amazing and felt like it could easily blow my hat off (if I were wearing a hat). The 5.1.4e Atmos-enabled system definitely created a swirl of wind around the room, but in some way it didn't seem quite as powerful. Both the 5.1.2c and 5.1.2e systems reproduced a sense of width and depth in the front of the room, but as with the scene in *TMNT*, it collapsed at my seat.

# Dolby Atmos vs. Dolby Atmos



● A 5.1.4 setup with four left and right ceiling speakers (numbers 6 and 7). Note the more forward position of the front height speakers compared with a 5.1.2 ceiling-speaker system.



● A 5.1.4 setup with four left and right Dolby-enabled speakers (numbers 2 and 5).

After Katniss and the rest of the group leave the hovercraft, it takes off and flies into the distance. Here, another interesting difference became apparent among the speaker setups. With the 5.1.4c ceiling system, there was a clear sense of a three-dimensional hovercraft taking off in the front of the room, and the sound of the craft gradually got smaller and smaller, as well as higher and higher, as it traveled out of the left front of the room. The 5.1.2c ceiling system with just two height channels was able to nail that effect, too, but because of the shortened 3D soundfield, it felt more like I was sitting at the edge of the action rather than in the middle of it. When I listened to the 5.1.4e Atmos-enabled system, the main difference I noticed was that the craft didn't seem to go as high as it flew away. Instead of the wide-open feel of the 5.1.4c system, there was a subtle sense of being in a more limited area, almost like being in a large bubble.

These patterns repeated themselves during numerous other scenes in *Mockingjay* that included travelling effects: A sense of total sonic openness with the 5.1.4c in-ceiling system; a large-but-limited bubble with the 5.1.4e Atmos-enabled system; being on the edge of the action with the 5.1.2c system; and solid front-stage width and height that collapsed at the listening position with the 5.1.2e system. There was also a slight

edginess to some of the music and off-screen voices on both of the Atmos-enabled speaker systems during the scene where Katniss walks into the makeshift hospital, for example.

## Conclusion

So, after all those comparisons, what's the bottom line? Well, first of all, Dolby's right: Using four ceiling speakers for the overhead channels makes for an awesome, theater-worthy experience—and that's with a 5.1-channel system as the starting basis. A system with four Atmos-enabled speakers is still a fantastic alternative. The subtle issues I had with the scope of the soundfield and the slight harshness of certain sounds might well be resolvable with a small amount of acoustic treatment, so you may not be sacrificing much if you can't use ceiling speakers. Dropping down to two Atmos overhead channels in the front (either ceiling or Atmos-enabled) definitely isn't as good, but it's still a dramatic improvement over a non-Atmos system.

To tell you the truth, before I set out to test these configurations, I wasn't really all that sold on Dolby Atmos for use in home theaters. All of the demonstrations I'd sat through had been at trade shows, such as CES. Under those types of conditions, angels could be singing, and you'd walk away saying, "Meh." Now that I've experienced Atmos in

my home, however, I'm hooked. Of course, I want the full configuration of four ceiling speakers, but I'd be happy with any of the other setups as well. Atmos really does add another dimension to the movie experience, and I mean that in more ways than one.

With only a handful of Atmos-encoded Blu-rays available (seriously, I can hold all of their cases in one hand), I can't say you should drop several thousand dollars and upgrade your system immediately. And the recent emergence of yet another competing object-based surround system, DTS:X, would seem to confuse matters for potential buyers. Fortunately, DTS was clear in its announcement that DTS:X will adapt to any speaker placement configuration, which suggests that DTS:X-encoded content played through an AVR or surround processor that handles both formats should work fine with an Atmos speaker layout. Only time will tell how true that is. But the first AVRs offering Dolby Atmos and DTS:X processing will be available by the time you read this, and it would appear that one well-planned system update may accommodate both.

So, let the games begin, and let the new object-based titles pile up. As more Atmos discs appear, along with more Atmos-enabled speakers and components, you'll probably decide that it's "high time" to give your home theater a makeover. ♦



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# BRYSTON

## Mini T Loudspeaker

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"The Mini Ts' unerring neutrality, great sound-staging, and ability to play ridiculously loudly without breaking up and distorting will tick all the right boxes for many music lovers, and will likely attract new customers to the brand."

**-Phillip Beaudette**  
*Soundstage!*  
2014

"What shocked me with the Bristons was how much of my collection was fun to listen to again."

**-Jared Rachwalski**  
*Secrets of Home Theater and High Fidelity*  
2013

"I could swear on a stack of TAS back issues that Ella Fitzgerald was right there next door in the listening room."

**-Ron Doering**  
*The Absolute Sound*  
2013

"These are, in short, very, very well-executed loudspeakers, crafted and finished to Bryston's long-established high standards, speakers that will fully reveal what is on a recording for better or for worse."

**-Daniel Kumin**  
*Sound & Vision*  
2014



# Well Bundled

By Daniel Kumin

## PSB Imagine T3 Speaker System

**PRICE \$11,855**

**WHEN YOU** HOOK UP A PSB speaker—pretty much *any* PSB speaker—you have a very good idea of what you're going to get. To wit: balanced octave-to-octave response that fits a tight decibel window from the design's lower limit to its upper; off-axis curves that are similarly smooth and "well bundled," rolling off higher frequencies progressively at more extreme angles but without sudden discontinuities; impressive-for-size low-end extension without any enhanced, bass-sweetening pre-rolloff response hump; a reasonably unchallenging impedance curve for easy-to-drive amp-friendliness, and coherent, strong stereo imaging promulgated by carefully derived driver locations and spacings and by a diffraction-free cabinet design.

These parameters are hardly revolutionary: They're straight out of the loudspeaker designer's hornbook. But for 40-plus years, PSB has been counted among the very best at nailing them to great effect and reasonable cost, a fact due in no small part to the close relationship forged over the years between the firm's co-founder and chief designer, Paul Barton, and Canada's National Research Council in Ottawa. The NRC features one of the world's premier anechoic chambers and associated acoustical-research facilities, where both fundamental study and practical development are pursued by PSB—as well as by many of Canada's numerous other speaker houses.

In PSB's lineup (as in most others, of course), the more you spend in both money and floor space, the tighter the response window and deeper the bass extension you'll get. In the brand's current lineup, the upper limit of both is defined by the

### AT A GLANCE

#### + Plus

- Reference-class sound reproduction
- Near-perfect center-channel matching
- Versatile dipole/bipole/double-monopole surrounds
- Excellent finish quality
- A bargain—for high-end speakers

#### — Minus

- Surround-mode change requires rewiring
- Cheap for high end—but not cheap

flagship, full-sized, floorstanding Imagine T3 tower. (The folks at PSB have recently rationed their offerings down from three or four distinct in-room lines to just two: the premium Imagine range and the value-priced Alphas.) The T3's datasheet specs on-axis frequency response of 30 hertz to 20 kilohertz within a 3-decibel window ( $\pm 1.5$  dB), with 30-degree off-axis response matching this up to 10 kHz. This is pretty rarified territory, but in PSB's case, at least, I'm inclined to believe the claims. (Full disclosure: I've known Paul Barton, professionally, for much of his career, and he's a science-based guy. Plus, he's Canadian.)

PSB sent us a pair of T3s—tall, slim three-ways whose rounded cabinets are beautifully finished in really fine cherry veneers, resting on

cast-aluminum bases adaptable to spikes or glides. Both are supplied, as are full-height fabric grilles, but the fully finished towers are so handsome naked that I never even unpacked the grilles. To complete a 5.1-channel system, the Canadians included their top center-channel speaker, the three-way Imagine C3 (also cherry), and a pair of Imagine S "Tri-Mode" surrounds, double two-ways that can adapt to dipole, bipole, or individually addressable, dual two-way surround/

rear function depending on hookup and jumper layouts. (Our S samples were gloss-black, but cherry is also available, and slightly cheaper.)

Unpacking the T3s was no day at the beach. They arrived double-boxed, with outer cartons nearly as tall as myself, and at 71 pounds each, the towers are no lightweights. With that heavy lifting done, I placed the T3s in my usual locations about 3 feet from the front wall, the C3 center in my equally well-established spot atop a low stand just below the bottom edge of my 52-inch LCD set, and the S surrounds on high shelves flanking the listening position. I started out with the surrounds wired as dipoles, my preference for movie sound.

Although hardly necessary to support the T3s' specified 24-Hz low-frequency limit ( $-3$  dB), PSB also sent along their 12-inch SubSeries 300 subwoofer—whose own low-frequency  $-3$ -dB point is actually spec'd higher, at 27 Hz. This went in my proven subwoofer spot, just outside and behind the right-front tower.

### The Beat of Stereo

As I always do, I began with unprocessed, full-range stereo listening: two channels, no subwoofer, just the T3s and my pre/pro's stereo-direct mode. What I heard matched my expectations almost perfectly: open, utterly uncolored midrange on even the trickiest male vocals, effortless yet airy top-octaves extension with no hint of tizz or sparkly highlighting, and fully authoritative deep bass.

Bottom-octaves smoothness, however, was conspicuously absent. Like so many fully low-end-capable speakers in so many real-world rooms, the PSB towers tended to overexcite my room's resonant modes, resulting in a surfeit of



**The T3 is a near-perfect full-range reproducer.**

● PSB supplies spikes and glides for the T3's cast-aluminum base.



## RATING

### PSB Imagine T3 Speaker System

Performance ★★★★★

Build Quality ★★★★★

Value ★★★★★



## THE VERDICT

**A superb loudspeaker** system from top to bottom—surely one of the best affordable high-end options available.

## SPEAKER SYSTEM

### PSB IMAGINE T3 SPEAKER SYSTEM

**PRICE:** \$11,855 (Imagine T3, \$7,498 pr; Imagine C3, \$1,999; Imagine S, \$1,359 pr; SubSeries 300, \$999)

**PSB Speakers** • (905) 831-6555 • psbspeakers.com

60-to-120-Hz energy at the listening chair and thus an overwarm, and even bass-bloated, presentation. It's a familiar problem with familiar solutions: I pulled the towers a couple of feet further out from the wall and blocked both of each vented enclosure's rear-panel ports with PSB's supplied bungs (adorable little rubber rounds that irresistibly call to mind old-fashioned drain plugs). In fact, PSB's literature warns of this propensity in many rooms and supplies the bungs for just such duty, directing you to block one or both, thus tweaking the system's low-frequency tuning as needed.

The relocation put the speakers further out into the room—nearly 6 feet from baffle to wall—than I probably would want to live with permanently (in a larger room, this would be no problem), but the effect was transformative. There was still plenty of second-octave bass to spare, but the excessive richness on elements such as pop bass guitar, low-voiced announcers, and soundtrack rumbles was gone, and this one adjustment revealed the T3 as, effectively, a near-perfect full-range reproducer.

Midrange balance was ideal: open, detailed, and utterly coloration-free on every voice or instrument, such that dense stereo music like a 96/24 FLAC of "Vast Continent" from the Yoichi Murata Orchestra could effortlessly breathe and reveal all the strands of its elaborate big-band arrangement, as well as the full depth of this excellent recording's

considerable soundstage. And high-treble tests like brushed cymbals and brass transients evidenced the sharply etched but non-tizzy, un-harsh definition that I only hear from expensive tweeters deployed by designers with a thorough understanding of tweeter/midrange/cabinet-surface interactions. (The T3's unusual "tweeter-under" configuration places the tweeter below the midrange transducer, which helps locate the in-phase lobe of the combined response at seated ear-height, among other factors.) There are few better sources for experiencing this than a rock drum kit well played and well recorded, of which you'll find few better examples than those on the classic *Sheffield Drum Record*. My trusty CD copy did its usual duty, and the PSBs reproduced Ron Tutt's and Jim Keltner's extended, unadorned solos to pretty damned convincing effect. Nothing, *nothing*, will fully reproduce the truth of standing next to live trap drums played hard, but the Imagine towers came excitingly close.

### Surrounded Again

Moving on to multichannel playback with a 5.0 setup (still no subwoofer), I found that the Imagine C3 speaker, reasonably compact for a three-way center, is an immensely capable speaker in its own right, giving up little if anything to the T3 in terms of authenticity or dynamics. Better still, at least in my system, its tonal match to the towers was superb, as



demonstrated by comparisons of various announcer voices between mono (center) and stereo (towers) reproduction. In fact, it was the best match I've heard from any center with a horizontal woofer layout. I'd posit that the C3's designers took into account the fact that a large, acoustically reflective surface—i.e., a television screen—is likely to be located directly adjacent to it.

The full PSB array cheerfully absorbed all available 150 watts per channel of my power amp with no hint of distress in any channel. These are fairly sensitive speakers, so this was ample power in my room; my amp reached well beyond any rationally desirable loudness long before reaching gross clipping. Even in a somewhat bigger room, this power level should be fully adequate.

Match all this up with the Imagine S surrounds, and you have a reference-class system for film-sound reproduction. With the surrounds wired in my preferred dipole mode, the bubble of ambience from front to rear was very nearly seamless, such that material like the cave scenes in *The Hobbit: The Desolation of Smaug* on Blu-ray conjured a very convincing ambient space, while the full system's impressively clean dynamic abilities maximized the wow factor in the film's countless big-action scenes.

Many listeners of multichannel music prefer direct-radiator (monopole) or bipole surrounds for hard-panned multichannel productions, but most of my listening consists of orchestral and chamber recordings that retain the front-stage



● The Imagine line is available in a handsome cherry veneer.

## TEST REPORT

● The SubSeries 300 is a 300-watt, 12-inch design.

## RATING

**PSB SubSeries 300 Subwoofer**  
 Performance ★★★★★  
 Features ★★★★★  
 Build Quality ★★★★★  
 Value ★★★★★



See [soundandvisionmag.com](http://soundandvisionmag.com)  
 for full lab results and technical definitions



SubSeries 300 is a very capable woofer, with substantial output to 25 Hz in my room (and even a bit lower) and tight, controlled second-octave contributions. When I rebalanced the system to integrate the sub with a 60-Hz crossover point and carefully matched level and phase, the differences in bass smoothness and bottom-octaves spatial and temporal integrity, relative to the 5.0 system, were essentially nil. But that begs the question: Do you really *need* the sub in an Imagine T3 system? For my tastes (which rarely if ever demand cinema reference level and runs to a

leaner/tighter bottom-octaves balance) and my room (which is just under 3,000 cubic ft), not so much.

In a larger room, or for a listener who regularly wants to rock the house with truly g-cinema levels, maybe. The addition of the sub does remove demanding low frequencies from the speakers and their associated amplifiers, after all. The T3s alone, in my room at least, had no difficulty with 25-Hz material, nor with top-grade cinema-sound low end, and the sub itself didn't seem to go a great deal lower, if at all. My

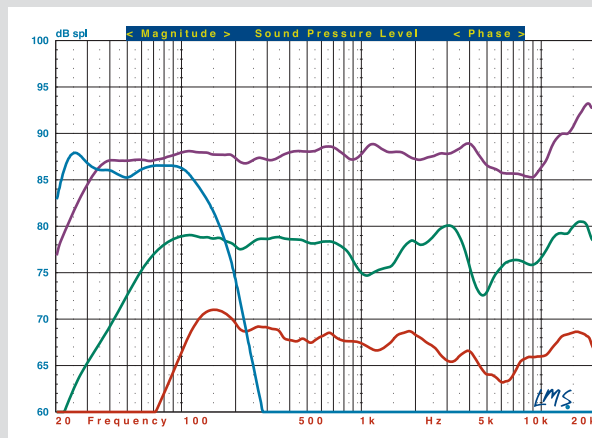
ultimate configuration was to run the T3s full range and cross the C3 center and S surrounds over (to the towers) at 60 Hz, with the SubSeries 300 performing as a supplementary LFE-only reproducer. Deployed thus, the subwoofer contributed—relatively rarely—an extra few decibels on big-budget effects like explosions or ultra-low rumbles or synth-bass thriller cues. For music in surround, I was perfectly happy with the wooferless 5.0 setup, which I retained in a processor preset. Of course, every room is different, as is every taste, but you could certainly add this or another sub at a later date without sacrificing much in the way of performance.

image, relying on the surrounds for hall-sound ambience. In such cases, I consider dipoles perfectly workable and perhaps even preferable, though bipoles work nearly as well and are clearly superior for the other kind of discrete-locations surround music—*The Dark Side of the Moon* on SACD, for example. Unfortunately, changing over the Imagine S' connections from dipole to bipole was a chore, especially for speakers wall-mounted head-high. So after due diligence in experimenting, I simply left them as dipoles, without a qualm. That said, an accessible bipole/dipole switch would've been awfully nice.

Now to that subwoofer. The

## Test Bench

### PSB Imagine T3 Speaker System



**IMAGINE T3 (purple)** +0.96/−2.72 dB, 200 Hz to 10 kHz; −3 dB @ 28 Hz, −6 dB @ 24 Hz; impedance minimum 4.40 ohms @ 90 Hz, phase angle −35.82° @ 71 Hz; sensitivity 88 dB, 500 Hz to 2 kHz.

**IMAGINE C3 (green)** +2.10/−5.42 dB, 200 Hz to 10 kHz; −3 dB @ 55 Hz, −6 dB @ 48 Hz; impedance minimum 4.66 ohms @ 992 Hz, phase angle −63.48° @ 134 Hz; sensitivity 88 dB, 500 Hz to 2 kHz.

**IMAGINE S (red)** +1.07/−5.29 dB, 200 Hz to 10 kHz; −3 dB @ 95 Hz, −6 dB @ 82 Hz; impedance minimum 5.64 ohms @ 221 Hz, phase angle −48.96° @ 136 Hz; sensitivity 86 dB, 500 Hz to 2 kHz.

**SUBSERIES 300 (blue)** Close-miked response, normalized to level @ 80 Hz: lower −3 dB @ 23 Hz, −6 dB @ 21 Hz, upper −3 dB @ 133 Hz using LFE input.—MJP

## SPECS

**Imagine T3:** 7 in fiberglass-cone woofer (3), 5.25 in fiberglass-cone midrange, 1 in titanium-dome tweeter; vented enclosure; 11.5 x 47.6 x 15.2 in (WxHxD); 71 lb • **Imagine C3:** 7 in fiberglass-cone woofer (2), 3.25 in fiberglass-cone midrange, 1 in titanium-dome tweeter; vented enclosure; 24.5 x 9.25 x 13.6 in (WxHxD); 33.5 lb • **Imagine S:** 5.25 in polypropylene-cone woofer (2), 1 in titanium-dome tweeter (2); sealed enclosure 10.75 x 12.75 x 7.2 in (WxHxD); 16.3 lb • **SubSeries 300:** 12 in polypropylene-cone woofer; vented enclosure; 300-watt (continuous) Class D; RCA stereo line input, output; multi-way speaker-level input, continuously variable Bass Level, Crossover controls; 15.4 x 20.2 x 17.4 in (WxHxD); 43 lb

## Conclusion

Is PSB's Imagine T3 system otherwise perfect? Of course not—though frankly, I'm straining to find shortcomings, other than the cost. Even for a full-sized 5.1 setup, the Canadian suite is far from

cheap. But then again, for what it delivers—reference-class performance in every parameter—the PSB suite is, if not a downright bargain in today's high end, a very fairly priced offering. ♦

● The Imagine S adapts to dipole, bipole, or dual two-way mode.

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# Pick a Peck of Pleated Planars

By Mark Fleischmann

## RATING

Dayton Audio B652-AIR Speaker System

Performance ★★★★★

Build Quality ★★★★★

Value ★★★★★

## Dayton Audio B652-AIR Speaker System

**PRICE \$299 as reviewed**

**LATE LAST** YEAR, A FLORIDA MAN walked into Starbucks and ordered a Grande Latte with 99 extra shots of espresso and 17 pumps of vanilla syrup, mocha, and matcha powder. His tab was \$83.75—more than a pair of Dayton Audio B652-AIR speakers. He was a big spender, of course, but if you ordered, say, a White Chocolate Mocha every day for two weeks at \$4.65 per cup, you'd still spend more than the price per pair of these speakers.

Yes, when I say the Daytonos cost \$60/pair, I haven't missed a zero, though I might be guilty of rounding: The exact Web price is \$59.80/pair. If you ditch the pleated planar tweeter for a more conventional dome, the price drops to \$39.80/pair for the regular B652—unless you want fries (oops, I meant a Class D amp) with that. Then the price goes to \$69.60 for the dome-tweeter version including amplification.

I'm quoting the price of a 5.1-channel setup as \$299, though that actually buys you six speakers and a sub. At such prices, you can afford to shove the extra speaker into the back of a closet. As toddler insurance, perhaps. You might also configure the sixth speaker as a single

## AT A GLANCE

## + Plus

- Super affordable
- Pleated-diaphragm tweeter
- Cinema-friendly voicing
- Excellent finish quality

## - Minus

- Lively cabinets
- Wire-clip speaker terminals

back-surround. Although that would be unusual, it is supported by many AVRs.

### No Frills (Well, Not Many)

The B652-AIR will never win any beauty contests, though it's hardly an eyesore. It

looks a lot like the no-frills speakers packaged with home-theater-in-a-box systems. The simple rectangular enclosure is fiberboard, not plastic. It does betray audible resonances when rapped with knuckles, indicating not much (if any) internal bracing or damping.

On the back is a keyhole mount and a pair of spring-loaded wire clips, the cheapest possible speaker terminals. At this price, I'm not complaining. The clips are suitable for pin plugs, bare wire, or the soldered tips of the supplied skinny cables. (Yes, your cheap speakers come with free cables!) In the unlikely event that you want to use terminated speaker cables, you'll have to go for the pin connectors—and that's what I did, unscrewing the banana plugs from my Monster 1.2s cables to use the underlying pins. I routinely warn that this kind of wire clip will not stand up to rough use. Treat them gently.

A detachable cloth grille is a pleasant surprise at this price. Pull it off the sealed enclosure, and you'll

find a 6.5-inch polypropylene-cone woofer and something fairly special: a folded-diaphragm planar magnetic tweeter, what Dayton Audio calls an Air Motion Transformer or AMT. Protected by a horizontal hard-plastic-ribbed grille and subtly shaped by a waveguide, the tweeter measures an inch square and the diaphragm is made of Kapton, a temperature-resistant polyamide film developed by DuPont. The pleated design uses a squeezing motion to create air-pressure changes (which our ears perceive as sound). Lest you think this is one of those ruthlessly revealing speakers, Dayton actually has voiced them fairly gently. It might tickle your ears, but it won't singe them.

I reviewed the B652-AIR with the SUB-1000 subwoofer. Backing up the 10-inch front-firing woofer is a conservatively rated 100-watt RMS amp. Modest cosmetic touches include curved side edges and a round speaker grille. On the back is a pair of line-level stereo inputs. The speaker-level ins and outs use wire clips.



● The B652-AIR houses a 6.5-inch woofer and a planar magnetic tweeter.



## THE VERDICT

If you want a home theater system and you want it now, these speakers will suit a draconian budget. Let a thousand starter systems bloom.

## SPEAKER SYSTEM

### DAYTON AUDIO B652-AIR SPEAKER SYSTEM

PRICE: \$299 (B652-AIR, \$60 pr; SUB-1000, \$119)

Dayton Audio • (800) 338-0531 • daytonaudio.com

Associated equipment included a Pioneer Elite VSX-53 A/V receiver, which at its original price of \$1,100 would buy 18 pair of these speakers. (Sorry, once I got started on these calculations, it was hard to stop.) Also in harness were an Oppo BDP-83SE universal disc player, Micro Seiki BL-21 turntable, Shure V15MxVR/N97XE cartridge, and the phono stage of a Denon PRA-S10 preamp. All movie demos were on Blu-ray Disc.

### Not So Cheap After All

Before break-in, the Daytonos sounded like cheap speakers with obvious coloration. Aha, I thought: You get what you pay for. However, six hours of use were transformative in this case. The coloration faded away except for a smidgen of cabinet resonance. Mid and high frequencies opened up and dispersed commendably well, both on and off axis; there wasn't a bad seat in the house. Although the pleated tweeter wasn't the airiest one of its kind I've heard (the "AIR" in the model designation notwithstanding), the top end was consistently listenable with all kinds of content. These speakers did love movies.

I should add that my default is always to listen with grilles on. Dayton's grille frame is a layer of

fiberboard with cutouts for the drivers. Grilles almost always affect the speaker's frequency response and diffraction patterns, though it didn't perceptibly hobble the tweeter's wide horizontal dispersion. Removing the grilles boosted the presence region, and some listeners may prefer that.

For cheap speakers, the Daytonos were surprisingly easy on the ears. Finding the right master volume level for *Captain America: The Winter Soldier* (Dolby Digital) was a set-and-forget affair. The speakers rendered everything palatable, from the pounding-drum hand-to-hand combat scenes to the assault-weapon attack that lavishly pocks Samuel L. Jackson's heromobile. Pulverized motor vehicles? No problem. Futuristic warships set aflame in the air? Bring 'em on. While this was not my kind of movie, the Daytonos had a way of delivering bombast and making me like it.

*Maleficent* (DTS-HD Master Audio), the live-action reimaging of the *Sleeping Beauty* story, brought out the B652-AIR's strong suits. Dispersion was so wide that moving around the sofa, or even standing up, did little to disturb the soundfield. These speakers really did fill the room. Images were solid but remarkably un-speaker-bound, another strength not usually associated with inexpensive speakers. That included vocal imaging, though the speakers had

enough textural resolution to find the orchestral treatment somewhat canned. (They preferred better-sounding material in the music demos.) And again, action-rich effects that filled the soundfield—notably a dragon attack in a dungeon—were dramatic, as intended, but not wearying.

*The November Man*, a Pierce Brosnan spy thriller set in Serbia, gave the Daytonos a chance to show off their big-soundfield strength in numerous crowd and nightclub scenes. The score's synth bass gave the sealed speakers and ported sub a chance to bloat, which they gracefully declined.

### Good Evening, Friends

Another reviewing project took me away from my home theater system for a few weeks. But during that time, the Daytonos were up and running, and they soon became constant evening companions.

One night, I was re-auditioning two LPs evacuated from my childhood home. It had been decades since I'd heard *Released* and *Last Autumn's Dream* by Jade Warrior, a British progressive rock band that combined journeyman songwriting with atmospheric instrumental passages that evoked worldbeat and New Age before they became fashionable. The Daytonos zeroed in on what would prove to be the most enduring elements of the band's later sound—the

muted-trumpet-like double-tracked electric guitars of Tony Duhig and the massed flutes of Jon Field—simultaneously defining these lush and complex instrumental textures and lofting them around the soundstage without tying them to the speaker positions.

A quick check of *Natty Dread* by Bob Marley and the Wailers confirmed my feeling that the satellites haven't got much bass when running full range, though the restraint of the sealed cabinets may be preferable to the port-induced bloat of many inexpensive speakers. The output capability of the sub itself was as much as my medium-sized room ever needed.

The CD box set of *Richter in Hungary* documents radio broadcasts by pianist Sviatoslav Richter between 1954 and 1993. The Eastern Bloc recording engineers involved didn't hit their stride until about 1976, on the disc devoted to Beethoven, and the discs covering works by Tchaikovsky and Grieg sound superb. The piano being a hybrid, percussive instrument, I paid attention to the good if not exceptional meshing of woofers and subwoofer. The Daytonos did justice to Richter's passion for dynamics, not only in the range of soft to loud but also at numerous levels in between. In general, the speakers encouraged boldness in master volume setting. They didn't go clattery at high volumes, so I played



● Unusually at this price point, the Daytonos come with cloth grilles.

## TEST REPORT

● The SUB-1000 includes curved edges and a round speaker grille (not shown).

## RATING

Dayton Audio SUB-1000 Subwoofer

Performance ★★★★★

Features ★★★★★

Build Quality ★★★★★

Value ★★★★★

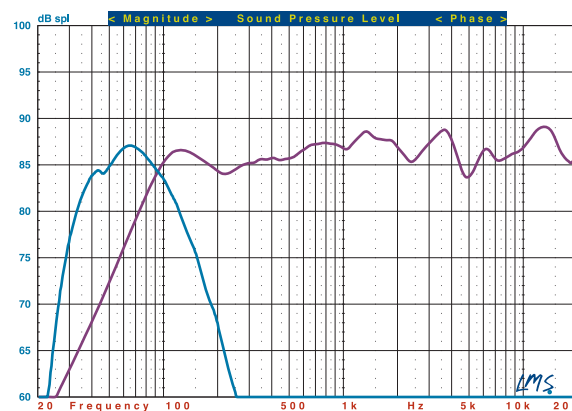


See [soundandvisionmag.com](http://soundandvisionmag.com)

for full lab results and technical definitions

## Test Bench

### Dayton Audio B652-AIR Speaker System



**B652-AIR (purple)** +1.78/-3.34 dB, 200 Hz to 10 kHz; -3 dB @ 91 Hz, -6 dB @ 77 Hz; impedance minimum 5.35 ohms @ 200 Hz, phase angle -27.83° @ 114 Hz; sensitivity 87 dB, 500 Hz to 2 kHz.

**SUB-1000 (blue)** Close-miked response, normalized to level at 80 Hz: lower -3 dB @ 38 Hz, -6 dB @ 33 Hz, -3 dB @ 108 Hz with Crossover control set to maximum.—MJP

## SPECS

**B652-AIR:** 6.5 in polypropylene-cone woofer, folded planar-magnetic tweeter with Kapton diaphragm; 7 x 11.75 x 6.75 in (WxHxD); 5.4 lb • **SUB-1000:** 10 in pulp-cone woofer; 100 watts RMS; vented enclosure; line-level RCA stereo input, speaker-level wire-clip input and output; 14 x 14 x 14.5 in (WxHxD); 30.5 lb

solid three and a half to four stars. But relative to speakers that sell for \$60/pair, which don't make our Top Picks at all, they are five-star champions. What would that otherwise buy you? Cheap, nasty, plastic-cabinet computer speakers, that's what. I'm almost equally as sanguine about the SUB-1000. It may not be the most powerful sub out there, but a \$119 sub that doesn't bloat is a rare bird.

Anyway, if you want to spend the absolute minimum on a starter system—but one with *real* speakers—the Dayton B652-AIR and SUB-1000 will give you more performance for less money than any speakers I've yet reviewed. ♦

Audio editor Mark Fleischmann is also the author of the annually updated book *Practical Home Theater* ([quietriverpress.com](http://quietriverpress.com)).



since I first bought the Japanese-import JVC CD (since replaced by the domestic SACD/CD used here). While the recording is in mono and has only a bit of subtle depth information buried in it, the Dayton's nonetheless stayed true to form, expanding the mono image into a room-filling experience. A beamier

speaker might have

produced a tighter mono image between the speakers, but the Dayton's approach enriched the music more.

Here's the part that will raise an eyebrow. Why on earth would I give these cheap speakers a five-star performance rating? Usually, I don't like dwelling on ratings, but let me point out that our ratings generally measure a product's merit relative to other products on the market in its price range, not in absolute terms. Compared with other monitor-size speakers in our Top Picks at all prices, the B652-AIR would win a

'em loud and was rewarded with better perception of the low to moderate end of Richter's dynamic vision, as he painstakingly customized the level of each phrase.

An orchestral tone check with Haydn's Violin Concertos, performed by the Concerto Köln and soloist Midori Seiler, suggested that what I'd previously perceived as a gentle top end was far from dumbed down. Upper-midrange and high frequencies were fully developed, even with grilles on.

Thelonious Monk's *Brilliant Corners* has been in heavy rotation



● The SUB-1000 has line-level and speaker-level inputs.

**The Dayton is a starter system with real speakers.**





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### Finish Options



Black ash



Walnut



Zebrawood



# Ultra HD Gets Smarter

By Thomas J. Norton

## Samsung UN65JS9500FXZA LCD Ultra HDTV

**PRICE \$6,499**

**ULTRA HD** REMAINS VERY MUCH a work in progress. Source material is still scarce, and while some is available through various forms of downloading and streaming, the promised delivery of Ultra HD on Blu-ray (the route most likely to offer the best UHD quality) is still months away. Furthermore, the UHD sets that have appeared to date offer little more than enhanced resolution—resolution that isn't really significant unless you see it on the biggest screen you can afford and sit closer than some folks prefer. This doesn't necessarily mean that a UHD set isn't desirable. Manufacturers are pouring their best R&D efforts into the technology. But the full benefits of UHD on domestically sized sets will come in the form of advanced color and higher dynamic range from content designed to tap these advantages, not just higher resolution.

Enter the new Samsung SUHD sets. The "S" in SUHD apparently doesn't stand for anything in particular. Not Super, not Sensational, not Smashing, not Supercalifragilisticexpialidocious. (Not even Samsung.) But all of those words could be used to describe the 65-inch-diagonal UN65JS9500FXZA (which I'll refer to as the 65JS9500), the smallest of the three models in Samsung's SUHD JS9500 series.

### Smart Technology

At \$6,499 list (though available for \$5,000 from major retailers, and even on Samsung's own Website, as

#### AT A GLANCE

##### + Plus

- **First-rate blacks and shadow detail**
- **Superb resolution—in both 4K and 1080p Full HD**
- **Impressive sense of image depth—even in 2D**
- **Best 3D seen anywhere**

##### - Minus

- **Image degrades significantly off center**
- **Annoying remote control**
- **Glitchy voice- and gesture-control features**

I write this), the 65JS9500 is one of the priciest sets of its size currently available. For that, you expect everything *including* the kitchen sink, and that's basically what you get.

The set's most visible feature, even when it's off, is its curved screen. For me, this would be neither a deal-breaker nor a deal-maker, though it remains highly contentious among videophiles. Samsung also makes an optional curved soundbar (!) for the set (not tested here). (For more on curved screens, pro and con, see "State of the Arc" in our June issue or at [soundandvision.com](http://soundandvision.com).)

The Samsung's rear-panel lacks the usual jack pack. Instead, a single cable links the set to the external (and theoretically, replaceable) One Connect box, which provides all of the wired inputs and outputs.

The set is currently equipped with

HDMI 2.0 (sporting the full 18-gigabit-per-second bandwidth) and HDCP 2.2. It's also ready for High Dynamic Range (HDR) sources, but HDR over HDMI will require HDMI 2.0a. This isn't yet available, but when it's ready, Samsung plans to offer an upgrade.

Several different versions of HDR are currently floating around the consumer video ecosphere, with no settled standard for either the content or display specifications. The best known is Dolby Vision. Samsung's

#### RATING

**Samsung UN65JS9500FXZA LCD Ultra HDTV**

2D Performance ★★★★★

3D Performance ★★★★★

Features ★★★★★

Ergonomics ★★★★★

Value ★★★★★

JS9500 sets use the SMPTE HDR Open Standard. The main concern for consumers here is that each version of HDR requires slightly different grading for the source. If you play back an HDR source created with HDR format A on a set using HDR format B, there could be a visible difference—perhaps insignificant, but we don't know yet. It will be to the industry's benefit to ensure that whatever grading is used on UHD Blu-ray will be fully interoperable with all HDR sets.

The 65JS9500's backlighting is multizone, full-array local dimming (Smart LED, in Samsungese). The number of zones isn't specified. Full-array local dimming not only improves black levels but also makes it possible to produce bright image highlights where they're needed on the screen, a key requirement for HDR video.

The set's backlighting isn't provided by the usual raw LEDs, but rather by Nano Crystal Color. This is Samsung's name for quantum dot or nanocrystal technology. A quantum dot is a microscopic, inorganic



● **The 65JS9500 has a full-array local-dimming backlight with nanocrystals.**



## THE VERDICT

**This is the first** consumer Ultra HDTV out of the gate offering more than just four times the resolution of 1080p HD. While it will require more UHD program material to fully judge its ability to provide 10-bit color, a wider color gamut, and higher dynamic range than today's content, this Samsung is still a strong candidate for the best LCD set launched to date.

## HDTV

### SAMSUNG UN65JS9500FXZA LCD ULTRA HDTV

**PRICE:** \$6,499 (1 pair 3D glasses included)

**Samsung** • (800) 726-7864 • [samsung.com](http://samsung.com)

particle that emits light of a specific wavelength when energized. The wavelength depends on the size of the dot. Typically, blue LEDs are used to energize the dots, which are sized to emit red or green light. Together with the blue LEDs, this produces the tricolored light required to illuminate an LCD panel. The image itself is still produced by the LCD panel; the dots (with the LEDs) merely provide the backlighting that all LCD sets require. The advantages claimed for this backlight technology over all-LED sets are a wider range of colors and lower power consumption.

The UHD source material currently available to the consumer is still produced with standard dynamic range, 8 bits per color, and the Rec. 709 (1080p Full HD) color gamut. But the UHD road map calls for a move up to 10 bits. And the new, wider UHD color gamut is expected to be a variation of something called P3, the gamut used in digital cinema.

P3 will provide more of the colors visible to the human eye than our present Rec. 709 does. That's why the ability to produce a wider range of

colors is significant. The Samsung 65JS9500 is the first UHD 4K set we've tested that should accommodate these added color and HDR features. According to the company, the 65JS9500 will accept and display sources using both 10-bit color and the P3 color gamut.

There's a lot of industry talk of an even wider color gamut, Rec. 2020, which is accommodated in the Ultra HD standard. But this isn't practical to achieve today in a consumer set. It's also not supported by all video experts. While the TV industry has a seemingly endless capacity to surprise us, I wouldn't hold my breath, or my checkbook, waiting for Rec. 2020.

The Samsung offers a full range of video adjustments, including multiple picture modes, 2- and 10-point White Balance controls, a full color management system (CMS), and multiple fixed gamma settings. The usual controls I rarely or never use are here as well, including digital video noise filters, Dynamic Contrast, Black Tone, and Auto Motion Plus. The last

of those is Samsung's motion-compensation feature. It's better thought out than most similar frame-interpolation features, and it offers a Custom mode with separate adjustments for Blur and Judder (to minimize the soap-opera effect). But I still avoid it.

### Smart Features

While great picture performance is the most important quality of any Ultra HDTV, the Samsung also has more bells and whistles than any self-respecting videophile can wrap his or her head around. There's something here for everyone. You can download the 160-page manual from Samsung's Website for more information than can possibly be covered in a review. Name a feature, and it's likely to be here: Smart apps, full Web browsing, links to the majority of the most popular streaming/downloading sites (Amazon, Netflix, YouTube, and so forth). You also get picture-in-picture (PIP) screen mirroring (to share content from another device), social networking, and the sharing of videos, photos, and music via your home network. And much more. Wired or wireless, of course.

The Smart features I did test here were HD streaming from Amazon and YouTube and the motion- and voice-control options. My wireless connection was nearly flawless, buffering only two or three times in hours of use, which suggests that your Web-based quality will depend more on your own Internet provider than on the Samsung itself.

The provided remote control is very small, with tiny and closely packed buttons. Your five-year-old may enjoy using it more than I did. It offers a pointer option that's quicker to use than the buttons, but incredibly fussy. The aiming position seemed to wander, sometimes even forcing me to point the remote well off-screen to position the cursor. As an alternative, there's a Samsung remote app available for iOS and Android that you can download to your smartphone or tablet.

I didn't like the voice-control option any more than I have on previous sets offering this feature. It

even popped up several times when I didn't ask for it. And the Motion Control option (Samsung's name for gesture control) kept insisting that I didn't have sufficient room lighting, even with a table lamp next to me. I went no further with these features, which simply aren't ready for prime time.

### SD and "Full HD"

The Samsung performed flawlessly on all of our standard video tests. It also looked impressive enough on 1080i/p sources to fool the average viewer into believing the material was true 4K. In other words, the 2K-to-4K upconversion was superb—possibly the best I've seen. The set also sailed through all of our available 4K test patterns with no visible issues.

The 65JS9500's audio is also far above the mediocre sound we hear from most flat-screen sets. It's more full-bodied, nicely balanced, and reasonably satisfying even on challenging material. There's still no true bass, and the sound overall isn't even a match for that of a modest outboard audio system, but it isn't likely to offend your silver (or even golden) ears. The set's optical digital output provides full multichannel audio passthrough with Dolby Digital sources but only two channels with DTS.

When the Samsung's video controls were set too high, even well short of clipping and in Movie mode, the images had visible glare on highlights—strong enough to look bad on sunlit faces. The settings I ultimately chose for both 2D movie viewing and calibration were Backlight at 7, Contrast at 62. This produced a picture with a peak white level of about 38 foot-lamberts and worked superbly well for me in a darkened room. For different situations (perhaps for normal daytime lighting, particularly when watching sports), some viewers might prefer using a Backlight setting of 15 with Contrast on 60, which produced a peak white level of 52 ft-L with no glare or other adverse effects. I discovered belatedly that my Sharpness setting of 50 produced artifacts on a frequency sweep test

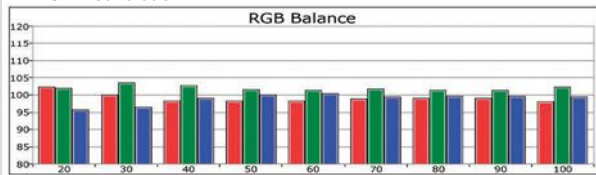


● **The Samsung offers a 65-inch screen with a subtle curve.**

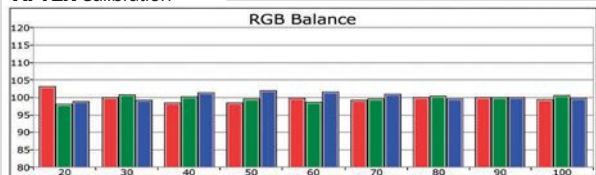
# Test Bench

Samsung UN65JS9500FXZA LCD Ultra HDTV

## BEFORE Calibration



## AFTER Calibration



**THE** measurements here were made using CalMAN measurement software from SpectraCal, together with Photo Research PR-650 and Klein K-10A color meters, and pattern generators including the VideoForge pattern generator from AVFoundry and the DVDO AVLab TPG.

**FULL-ON/FULL-OFF** Contrast Ratio: Unmeasurable

**FOR** the picture settings used in this review, go to soundandvision.com. **WITH** a full black test pattern on the screen, the LED MultiZone Full Array Backlighting shuts down completely in any setting of the Smart LED (edge-lit local dimming) control (even when turned off). And because of the zone dimming, my normal procedure of using a pause bug in the corner of the screen didn't trick the backlighting into performing as it normally might with a real-world image (a mostly dark image with brighter highlights). In other words, any off-center brightness doesn't alter the total black at center screen, the area where we take our full-on/full-off contrast measurements.

**THE** set was calibrated in 2D only and in the Movie Picture mode. With the Warm2 Color Tone (Samsung's name for color temperature), the set's pre-calibration's Delta E values averaged 1.56. The highest Delta E value was 1.68 at 90%. No other level exceeded 1.64. After calibration, using only the 2-point White Balance controls, the grayscale Delta E averaged 0.71 with a maximum of 1.42 at 60%. No other level exceeded 1.23. The post-calibration peak white level, with a Backlight setting of 7 and Contrast setting of 62, measured 377 foot-lamberts.

**(DELTA E)** is a figure of merit indicating how closely a display adheres to the Rec. 709 HD color standard. Experts generally agree that at levels below 3 to 4, the result is visibly indistinguishable from perfect color tracking. A Delta E may be used to characterize either white balance (grayscale), as above, or color, as below. We are now using the most recent mode of calculating Delta E, DE2000, and these results may not be directly comparable to the Delta Es shown in our earlier reviews.)

**(THE)** measurable and visible improvements from using the 10-point White Balance controls, some of which had little effect, were small and proved to be not worth the time and tedium involved in using them. The Samsung's color was hard to criticize—either before or after calibration. That doesn't mean, however, that we don't recommend a calibration for such a high-end set. We can't know if our pre-calibration result will be typical of all samples.)

**IN** the Auto Color Space setting, the color gamut's pre-calibration color Delta E averaged a respectable 3.07. After calibration in the Custom setting for Rec. 709, it averaged 1.4, with green the highest at 2.42. **WITH** the Gamma control on -3, the post-calibration gamma averaged 2.37 with a high of 2.45 at 40% and a low of 2.27 at 80%.—TJN

## SPECS

**Dimensions (WxHxD, Inches):** 57.1 x 33 x 4.9 (without stand); 57.1 x 36.1 x 14.9 (with stand) • **Weight (Pounds):** 71.2 (without stand); 78.3 (with stand) • **3D Glasses:** Active, 1 pair included, extras \$20 each (SSG-5150) • **Video Inputs:** HDMI (4), component video (1, shared with adapter), composite video (1, shared with adapter), RF (Antenna) • **Audio Inputs:** Stereo analog • **Other:** EX-Link, USB (3: 1/USB 3.0, 2/USB 2.0), LAN, IR out, MHL on HDMI 3, Audio Return Channel on HDMI 4 (with compatible AVR) • **Audio Outputs:** Optical digital (Toslink), stereo analog (with adapter)



● **Samsung's One Connect box provides all of the set's inputs and outputs.**

pattern. But it also clearly offered more apparent detail on upconverted material without adding visible edge enhancement or other unnatural artifacts as seen from a standard viewing distance. A setting of 30 to 35 was a respectable compromise.

Even before calibration, the Samsung looked astonishing. The resolution on the best Blu-ray transfers was amazing, even when viewed from 10 to 12 feet away. I saw details on familiar discs that I'd never noticed quite so clearly before. Textures were superb, from faces to clothing to natural objects. At the beginning of *Microcosmos* (1996) on Blu-ray, there's a disclaimer alerting the viewer to occasional picture flaws due to the age of the material. The only "flaw" I spotted was film grain, highly visible in some shots but virtually invisible in most. What I did get from this disc was some of the most dazzling detail you're likely to find in any source material. The set's Digital Clean View control could remove most of the grain, but it also subtly softened the image. I left it off.

Even out of the box, our sample of the Samsung had exceptional color. And while I spent hours calibrating the set, the visible improvement over the uncalibrated set in the Warm2 Color Tone setting was small.

Equally important

was a palpable sense of image depth, even with 2D sources. I also noticed what appeared to be enhanced dynamic range on current, non-HDR source material—even at the low picture settings described earlier and with the Dynamic Contrast control off. When Jack drops into the subterranean library in *Oblivion* (chapter 3, 16:20 into the film), his flashlight shines more brightly than I recall seeing on other sets, particularly when it flashes directly into the camera. Ditto for the setting sun visible on his return to the station (at the beginning of chapter 4). Further viewing turned up many more such examples.

I was later able to confirm that the set does indeed produce an

HDR-like effect with non-HDR content. The effect makes use of both the set's Smart LED local dimming and pixel-level processing, and can be defeated only by turning Smart LED off. This of course will dramatically compromise the set's outstanding black level. While I wish Samsung had provided a less drastic way to disable the derived HDR, I'd likely have left it on even then. It really did add a realistic, fully believable punch to the picture. All of my observations here, apart from the very limited true HDR material Samsung provided, were made with this derived HDR (and therefore Smart LED) engaged.

With the set's Smart



● **Samsung's sparse remote uses a virtual pointer.**



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LED control on High, blacks were outstanding. Even in a darkened room, the black bars on widescreen images disappeared on most material—and after fades to black, the set disappeared completely. All of my favorite inky test scenes came across perfectly (in particular, the entire last act of *Harry Potter and the Deathly Hallows: Part 2*), though I sometimes had to change the Brightness setting a step or two for the set to do them full justice. There was some visible blooming around bright objects against a dark background. (My acid test for this is the screensaver that shows a white Oppo logo moving across a black background, courtesy of my BDP-105D player.) But this was rarely visible on typical sources.

I occasionally saw blotchy grayness in parts of a dark screen image—most apparent when the Smart LED setting was turned down or off, but rarely visible on my preferred High setting. There were also some minor backlight uniformity issues, though they were very hard to spot on anything other than dark to mid-gray full-field test patterns.

One aspect of the Samsung's performance was definitely less than stellar, however, and it was no surprise. My picture evaluations were made while sitting on center or only a few degrees off. But move 20 degrees or so to either side, and the image starts to fade, subtly at first but becoming worse the further off center you get. This is common to many LCD sets. And the closer you move to the TV (to get the full benefits of 4K resolution), the narrower the optimum seating area becomes.

The 65JS9500 also does 3D. At

first, the 3D glasses I was sent didn't function. That is, they didn't fuse together double 3D images. When they finally did work (and I could never discover exactly why), about half of the 3D discs I sampled produced an unwatchable flicker. Samsung worked on the issue, however, and shortly before our deadline provided an update. It fixed the problem; I sampled nine different 3D discs and they all worked properly, with no flicker. (Owners of this TV should note that, though I had my sample set for automatic firmware updates, the update Samsung pushed through to fix the 3D didn't download until I manually selected "Update now" from the menu.)

Both before and after the fix the Auto Motion Plus (motion interpolation) feature was *always* on in 3D, even when I turned it off in the menu. When I turned on the set's 3D-to-2D mode (with a 3D disc loaded), that didn't turn it off, either. Fortunately, the Custom mode of this feature allows you to separately adjust both Blur and Judder. Setting Blur to 10 (maximum) and Judder to 3 to 4 smoothed motion blur noticeably while still retaining enough of the film look to satisfy my inner video purist (though I still left Auto Motion Plus off in 2D).

All of that sorted out, the 65SJ9500 produced by far the best 3D I've ever seen, anywhere, either at home or in the theater. It was sharply detailed, more than satisfyingly bright, and showed no obvious ghosting. For the first time I can honestly say that if given the choice on this set I'd watch the 3D version of a Blu-ray instead of the 2D. This is doubly ironic given that the popularity of 3D at home, and the availability of 3D discs, is shrinking just as at least one company has finally discovered how to take full advantage of the format.

### Ultra HD

The UHD source material available to us is still limited. YouTube's 4K videos, for example, use the VP9 video codec and not the Samsung's (and the more widely used)

H.265 (HEVC). The Samsung only decodes 4K YouTube content as 1080p. But I did have a Sony FMP-X10 UHD Media Player on hand, which now works on any UHD set with HDCP 2.2 copyright management. It included 4K content ranging from the excellent-looking documentary *Beneath the Blue Sea* to a trailer for *The Amazing Spider-Man 2* with a weird, reddish color balance (likely a creative choice—I haven't seen the movie). None of the 4K material I was able to view on this set looked any better (and sometimes it looked worse) than the best upscaled 1080p Blu-rays, including those mentioned earlier.

Of course, we're still in UHD's early days, and I'm not the first to remark that higher resolution is the least important feature of the technology. Color and HDR could have a far bigger impact. I had an even smaller sample of HDR material: very short excerpts from *Life of Pi* and *Exodus: Gods and Kings* that Samsung provided to us on a USB flash drive. At first, viewed with the Medium setting of the Dynamic Contrast control and significant increases of the Backlighting and Contrast controls (the selections looked all wrong in the settings I used for the non-HDR material), the result was HDR overkill, like drowning a big slice of chocolate fudge cheesecake with hot fudge sauce. But after toning down the controls, it was easy to see how HDR can improve the UHD picture. Bright highlights popped, but in a natural way. Without appropriate test patterns and perhaps new test tools, however, we're left to using our eyeballs to get this right, at least for now. The risk in this is that HDR can (and will) be overdone. To see how, you'll need to look no further than your local big-box discount store later this year!

### Comparisons

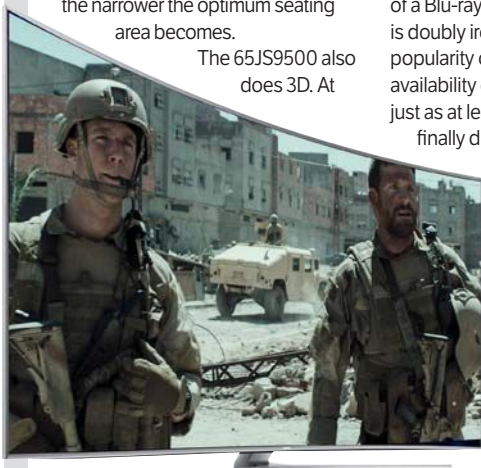
While my 65-inch Panasonic TC-P65ZT60 plasma is no longer in production, it's nevertheless a good candidate for the best 1080p HDTV ever made. I set it up side by side with the Samsung and drove them both from the same Blu-ray source

material. I had to fiddle with the control settings on both sets to get them to match as closely as possible—difficult to do when comparing a plasma with an LCD. (The latter still had gobs of brightness in the tank when the plasma was huffing and puffing to keep up.) But even with as close a match as I could manage, the Samsung won that challenge, with more pop, particularly on bright highlights. It also had more detail, thanks to its (upconverted) 4K resolution. The colors were different, but mainly because the Panasonic, just recently unpacked from its cross-country move, needs a calibration touchup. And the Samsung LCD should clearly eat less power than the Panasonic plasma.

However, the Panasonic had superior off-center viewing, a better gamma (the Samsung could really benefit from an additional gamma step to the dark side), less motion blur (unless you can stand to use Auto Motion Plus), greater adjustability, and a hard-to-define but (indulge me here!) more laid-back, analog look. If I didn't already own two plasmas (the Panasonic and a 60-inch Pioneer Kuro), would I dig into my checkbook to buy the Samsung? You bet, though its LCD off-center image degradation remains a significant issue—for me.

### Conclusions

Yes, it's pricey. And no, there won't be a glut of 4K source material for some time yet. But aside from off-axis viewing and that wonky remote, the Samsung UN65JS9500FXZA equals or betters any other set I've yet reviewed. The only question is whether or not OLED, which can do equally well or better with blacks while eliminating the off-axis problems, can perform as well in other respects at a similar price. That said, we have yet to see a 65-inch OLED Ultra HDTV that offers both advanced color and HDR for a lower price than the Samsung (particularly with discounts). Until that happens, the Samsung is here now, and it's ready for any and all challengers as King of the Ultra HD Hill. ♦



**The Samsung UN65JS9500FXZA equals or betters any other set I've reviewed.**





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# Triad's Upmost for Atmos

By Darryl Wilkinson

## Triad InRoom Bronze LR-H Speaker System

**PRICE \$11,050**

### NINE OUT OF 11.4 PEOPLE

(approximately) reading this report are thinking, "Who the hell is Triad?" (Hopefully, fewer folks are asking, "What the hell is Atmos?" If you're one of them, hang in there. I'll get to Atmos in a bit.) To answer the original question, Triad is a Swiss Army Knife-like manufacturer of custom-installed speakers. That is, regardless of the particular application, Triad has a blade—er, speaker—designed and built for it (in the U.S. of A., by the way). You need in-room, in-ceiling, or in-wall speakers? Check. Invisible in-wall speakers? Ditto. OK, what kind of subwoofer do you want? The standard in-room or an in-wall design? Yes and yes. (Yawn.) Why not try something a little less common, like one of Triad's on-wall, in-cabinet, or in-ceiling subwoofers? Then there's Triad's esoteric and rather sinister-looking FlexSub, which includes an expandable, flexible tube that channels the bass output from the hidden subwoofer cabinet to a remotely located grate or grille.

Anyone who's not impressed by now should be because, well, that's a pretty damn impressive range of speaker styles. And the list above doesn't even include the model that's the subject of this review: Triad's first Dolby Atmos-enabled speaker, the InRoom Bronze LR-H. (The company also recently announced the somewhat larger InRoom Silver LR-H, at a cost of \$1,500 each compared with

### AT A GLANCE



Plus

- **Dolby Atmos enabled**
- **Natural, open character**
- **Superb match with InWall Bronze/4 SlimSub**



Minus

- **Atmos operation limits use in cabinets or behind a screen**

\$1,000 each for the InRoom Bronze LR-H).

### Don't Be Baffled by Atmos

If you're a little hazy or completely in the dark about Atmos, you're in exactly the opposite position that Triad is in: The company worked closely with Dolby to help develop the standard for Atmos-enabled speakers. In this case, it means Triad should have a pretty good idea of what they're doing, and maybe even a little advantage over other speaker manufacturers when it comes to designing and engineering speakers for Atmos, at least, those that use up-firing elevation speakers for the height channels.

Triad's InRoom Bronze LCR—the speaker on which the InRoom Bronze LR-H is based—isn't a totally new speaker. Nor is its tonally matched architectural sibling, the InCeiling

Bronze/8 LCR. Similarly mature is the InWall Bronze/4 SlimSub (of which Triad sent four, along with each one's dedicated 350-watt companion amp with required internal equalization for each, to use as part of the test systems in my feature story "Dolby Atmos vs. Dolby Atmos" on page 30). The InRoom Bronze Center, a dedicated center-channel speaker also reviewed here, is a relatively new model based on the InRoom Bronze LCR, but with an offset tweeter. And the InRoom Bronze LR-H is so new that you can almost still smell the ink from the CAD drawing printouts.

Standing just over 19 inches tall, the Bronze LR-H isn't what you'd call a mini monitor. Nor is it a classic bookshelf speaker, due to the Atmos-enabled module integrated into the top of the speaker's cabinet, which needs an acoustically unobstructed path to the ceiling. The speakers that Triad sent were finished in matte black with black metal grilles on the front and top of the cabinet. As

● **The 19.5-inch-tall InRoom Bronze LR-H atop stands.**



such, the LR-H isn't going to win any beauty contest (Triad knowingly doesn't include a swimsuit for the speaker), but it's not ugly. File the description of its cosmetics under "Plain, Nondescript, Black Box with a Grille."

Basic black, however, is but the beginning. Since Triad builds everything in-house, one item at a time, the company is able to offer "an unlimited array of custom veneer finishes and custom paint matching to blend with your environment." (I doubt that "unlimited" includes Truffula Tree wood veneers, but we'll let that pass. Chameleon probably isn't on the list, either.) So if you want your speakers to be loud—visually, that is—Triad can do it.

Regardless of the color of the cabinet, behind the curved, metal, perforated grille on the front are two 5.5-inch proprietary cone drivers and a single 1-inch fabric-dome, neodymium tweeter, arranged in an acoustic sandwich configuration (also known as a D'Appolito array). The cabinet is a sealed enclosure that's built like a brick sh—, uh, "bank vault," as Triad describes it.

There's no indication on the front of the Bronze LR-H that this is an Atmos-enabled speaker. It only starts to dawn on you when you peer in through the metal mesh grille on the top of the cabinet (your first clue) and see a cluster of four full-range 2-inch cone neodymium drivers (your second clue). The drivers are mounted in a square pattern, all on the same baffle, which is angled 20 degrees forward



● **The InWall Bronze/4 SlimSub measures 3.9 inches deep.**



## RATING

### Triad InRoom Bronze LR-H Speaker System

Performance ★★★★★  
Build Quality ★★★★★  
Value ★★★★★

## THE VERDICT

**Awesome for Atmos** and awesome at most everything else.

## SPEAKER SYSTEM

### TRIAD INROOM BRONZE LR-H SPEAKER SYSTEM

**PRICE:** \$11,050 (LR-H, \$1,000 ea; **Center**, \$650 ea; **InWall Bronze/4 SlimSub & RackAmp 350 DSP v2**, \$1,600 ea)  
**Triad Speakers, Inc.** • (503) 256-2600 • triadspeakers.com

(your third clue). Opposite that baffle is a rear-facing, much more steeply angled panel treated with acoustic foam in order to minimize unwanted reflections that would otherwise occur with a flat surface so close to these drivers.

On the back of the cabinet are two sets of binding posts. The top pair is for the Atmos-enabled section. The bottom two posts are for the forward-firing drivers. Remember that your system's overhead channels—front and rear—are independent channels requiring their own amplification, which means you'll have to run two sets of speaker wires to each Atmos-enabled speaker. (Wireworld, Monster Cable, AudioQuest, and a spool-ful of other wire companies have already sent thank-you cards to Dolby.) Since the driver sections are independent, though, the upfiring section of the Bronze LR-H won't be active when you're not using the appropriate processing in your AVR or pre/pro.

To begin with, the Atmos-enabled section stays dead quiet when you're listening to two-channel or non-Dolby multichannel sources. (You can, of course, use the Atmos renderer in your AVR or pre/pro to upmix Atmos-less content, if so desired.) Triad has always taken great pains to ensure that all speaker models in a given series—the Bronze, Silver, Gold, and Platinum collections, for

example—sound as much like each other as possible. In other words, the InCeiling Bronze/8 LCR is supposed to mimic the performance of the InWall Bronze/4 LCR, both of which are intended to compliment the InRoom Bronze LCR and Center note for note.

The InRoom Bronze/4 SlimSub and RackAmp 350 DSP v2 combo utilized here was previously reviewed by me in 2013 with the original version 1 RackAmp 350; the full review with ratings is available at [soundandvision.com](http://soundandvision.com). The passive sub features a 10-inch aluminum long-throw woofer mounted in a sealed cabinet that's only 13.5 x 19 x 4 inches (WxHxD) and hence fits easily in most normal wall cavities. The discrete RackAmp packs 350 watts (mono), but that's only part of the story. You can also calibrate the hell out of it thanks to extensive DSP fine-tuning for the crossover and built-in EQ, all of which can be accessed via the RackAmp's Ethernet port, your home network, and a web browser.

I used four InRoom Bronze/4 SlimSubs—each one with its own dedicated RackAmp 350 DSP v2—permanently mounted in the walls of my theater room. (The RackAmp 350s were mounted in one of my OmniMount RE42 80-inch-tall A/V racks, not in the walls.) Two of the SlimSubs were installed facing each other in the left and right walls of the room about a foot-and-a-half from the front wall. The other two subs were also installed opposite each other in the side walls but much farther back in the room, around 15 feet from the front wall.

(Overall, my room is 12 feet

wide by 24 feet deep with an 8-foot-high ceiling.) I used all four subs for the home theater listening tests because, as I've discovered in the past, having four subwoofers in my theater room dramatically evens out the bass response throughout the room. Consequently, our overall system cost includes the cost of four \$1,600 subwoofer/amp combos, or a whopping \$6,400 for the bass reinforcement alone, but depending on your needs, there are other potentially more cost-effective approaches you can take (see below).

### Raising the Ceiling of Sound

Not surprisingly, the InRoom Bronze LR-H—which is essentially an InRoom Bronze LCR with 4 inches of Atmos module built on top of it—sounded tonally like its Bronze brethren, both the non-Atmos InRoom Bronze Center used for center-channel duties and the In-Ceiling Bronze LCR models (not used here) that I tapped for my accompanying Atmos feature story. With movies, the soundstage across the front was seamless. For example, in *The Expendables 3*, during the opening scene where they rescue

Doc from a prison train before ramming said train into the prison, the dialogue (such as it is) was clean and clear amidst the mayhem of destruction that happens across the front. When I

listened to the same scene using all four LR-H speakers for the front and surround speakers in Dolby Atmos, the system created an amazing sense of open-air space throughout the room, while the action remained solidly in the front.

As expected with a system using five “identical” speakers (the four InRoom Bronze LR-Hs and the InRoom Bronze Center), the panning around the room was spot on. With Atmos engaged, the seamlessly surrounding soundstage remained, only with the engaging dimension of height tacked on. Again, in *The Expendables 3*, when Stonebanks is interrogating the younger group of Expendables as they are held up with ropes around their hands, both dialogue and subtle effects (such as the sound the ropes make as the prisoners sway) were clearly defined in a continuously surrounding circle. Atmos playback, on the other hand (so to speak), lifted the sounds of the swinging ropes high up towards the right rear.

The amazing thing about Triad's InWall Bronze/4 SlimSub was not the low bass extension it provided—although there was nothing shallow about that aspect—but rather its apparent speed and clarity. The impact the sub had, whether it was during Shredder's shredding and splintering of Splinter in *Teenage Ninja Mutant Turtles* or during the complete and utter destruction of the prison in *The Expendables 3*, was solid and formidable. Still more impressive was the way it integrated with the satellites to make one coherent unit of sound rather than a



● The RackAmp 350 DSP v2 features extensive DSP fine-tuning.



● The InWall Bronze Center (right) uses the same front-firing drivers as the LR-H but offsets the tweeter.

Triad InWall Bronze/4 SlimSub

Performance ★★★★★

Build Quality ★★★★★

Value ★★★★★



See [soundandvisionmag.com](http://soundandvisionmag.com)  
for full lab results and technical definitions



recognizable “system.” This quality may be even more important to have with Atmos content, as was pointed out to me by my teenage (non-ninja and I think non-mutant) daughter when we watched Enrique Iglesias’s *Bailando* video in Dolby Atmos: There was actually a dimension of height to the bass that was totally in sync with the video. (It’s an awesome Atmos demo, by the way, and I don’t even like Enrique Iglesias.)

Four subs don’t give you deeper bass. Sure, they can generate more decibels; but the real benefit lies in the way they work together to energize the room in a way that a single subwoofer simply can’t do thanks to Isaac Newton and his damn physics. Obviously, though, not everyone can plunk down \$6,400 for four Triad in-wall SlimSubs. A single SlimSub is still an amazing performer in both integration and impact, although it can’t smooth out the room modes all by itself. Furthermore, you may not need an in-wall sub at all. In that case, Triad’s On-Wall Bronze SlimSub (\$1,600), designed for on-wall mounting, or InRoom Bronze SlimSub, for open display or hiding under a couch or cabinet (\$1,600 each) are said to offer similar performance. Triad’s InRoom Bronze sub (also \$1,600) is a more traditional cabinet version with the same amp.

### It’s Got Body and Soul

The two-channel performance of the InRoom Bronze LR-Hs was stellar. Take “Be My Number Two” from Joe Jackson’s *Body and Soul*, an album that was recorded inside the stone-and-wood hall of an old Masonic Lodge. The song starts with Jackson singing and playing the piano. It’s an intimate and poignant beginning, and the LR-Hs were quite adept at reproducing the subtle details and nuances of both the piano and Jackson’s slightly uneven voice. About two-thirds of the way through the song, though, when the drums kick in with full force, what began as an intimate performance became an entire wall of sound. Since the

LR-Hs are rated down to only 88 hertz, this was when the InWall Bronze/4 SlimSub really came to life. (I used only one of the subwoofers for music testing.) Still, the sub sounded tight, and the blending with the rest of the system was fantastic. As a result, if you walked into my home theater and didn’t know there was a sub in the room—which is likely, since the SlimSub is an in-wall subwoofer—you’d be simply astounded at what you thought was the low-end extension of the LR-Hs.

The subwoofer, however, wasn’t the only component able to disappear. Take the case of a different sort of “Body and Soul,” Charles Mingus’ solo piano recording from *Mingus Plays Piano*. His performance is tight, taut, and together—and here, the LR-Hs simply melted away, allowing the piano to become fully formed in the room during both the quick, sharp sections and the smoother and more peaceful intervals. In a similar manner, the extremely neutral character of the speakers allowed the woody-sounding body of Mark Knopfler’s acoustic guitar on “Heart of Oak” (from the Deluxe Edition of *Tracker*) to come through splendidly, while at the same time reproducing the snap of the strings. In contrast, on the same album’s “Laughs and Jokes and Drinks and Smokes” (a good description of a *Sound & Vision* editorial meeting), the soundstage was especially wide, with lots of instrumentation, discretely placed background vocals, and an impressive drum line that, as with the Joe Jackson cut, seemed to magically come from an invisible set of drums placed behind the speakers.

### Conclusion

There are two reasons why it’s easy to recommend Triad’s InRoom

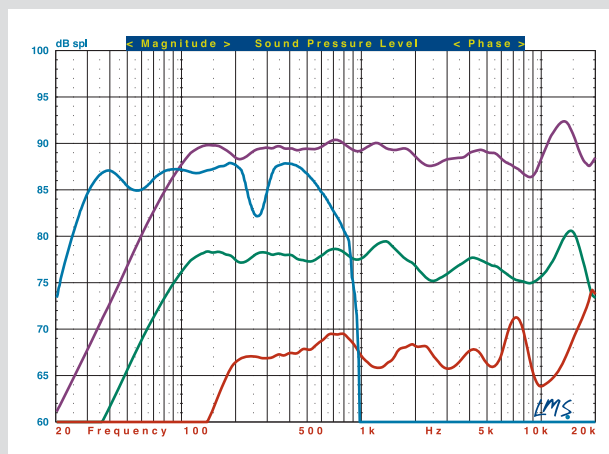
Bronze LR-H speakers to anyone who’s contemplating putting together a Dolby Atmos home theater system. First of all, the speakers are one of what for now remains a limited number of Atmos-enabled speakers currently on the market.

But really, that’s immaterial, because I’d recommend the LR-H even if there were a hundred Atmos speakers to choose from. It’s a truly excellent monitor-style speaker for both two-channel music and old-style 5.1-channel movies (when paired with a Bronze-series sub) that can

also “raise the roof” when more Atmos-encoded Blu-rays start appearing in stores. That’s a win-win—and a speaker that’s an all-around (and all-above) winner. ♦

## Test Bench

### Triad InRoom Bronze LR-H Speaker System



**LR-H L/R (purple)** +0.90/−3.12 dB, 200 Hz to 10 kHz; −3 dB @ 90 Hz, −6 dB @ 73 Hz; impedance minimum 4.30 ohms @ 4.5 kHz, phase angle −52.13° @ 2.5 kHz; sensitivity 89.5 dB, 500 Hz to 2 kHz.

**INROOM BRONZE CENTER (green)** +1.45/−3.06 dB, 200 Hz to 10 kHz; −3 dB @ 90 Hz, −6 dB @ 73 Hz; impedance minimum 4.29 ohms @ 4.5 kHz, phase angle −52.47° @ 2.5 kHz; sensitivity 89.5 dB, 500 Hz to 2 kHz.

**LR-H ATMOS HEIGHT SECTION (red)** +3.79/−3.63 dB, 200 Hz to 10 kHz; −3 dB @ 174 Hz, −6 dB @ 150 Hz; impedance minimum 14.29 ohms @ 505 Hz, phase angle −64.28° @ 230 Hz; sensitivity 86.5 dB, 500 Hz to 2 kHz.

**SLIMSUB (blue)** Close-miked response, normalized to level @ 80 Hz: lower −3 dB @ 31 Hz, −6 dB @ 26 Hz, upper −3 dB @ 238 Hz using the LFE input of the companion RackAmp 350 DSP v2 subwoofer amplifier.—MJP

## SPECS

**InRoom Bronze LR-H:** 5.5 in proprietary cone woofer (2), 1 in fabric-dome tweeter; Atmos-enabled section, 2 in proprietary cone driver (4); 7.6 x 19.5 x 9.25 in (WxHxD); 21.8 lb • **InRoom Bronze Center:** proprietary cone woofer (2), 1 in fabric-dome tweeter; 7.6 x 15.5 x 9.3 in (WxHxD); 19.8 lb • **InWall Bronze/4 SlimSub:** 10 in aluminum-cone woofer; sealed enclosure; 13.5 x 19 x 3.9 in (WxHxD); 20 lb • **RackAmp 350 DSP v2:** 350 watts RMS; line-level stereo in, high-pass out; IR remote; 5V-20V trigger; 17 x 1.75 x 14 in; 13 lb



● A petite remote comes with the RackAmp 350 DSP v2.

● Four 2-inch drivers make up the LR-H’s elevation section.





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SPEAKERS

# Sweets from Denmark

By Daniel Kumin

## DALI Zensor 5 Speaker System and Hsu Research VTF-1 MK2 Subwoofer

**PRICE \$2,244 as reviewed**

**DALI** IS A COMPANY THAT HAS nothing to do with surrealist art or Tibetan Buddhism. The acronym is for Danish Audiophile Loudspeaker Industries, which over some 30 years has grown from a home-market specialist to a respected international brand. Despite this success, I had never gotten up close and personal with any DALI designs (trade-show demos excepted) until they shipped us a representative selection of their new Zensor entry-level series. Since the Zensor-ship currently lacks a subwoofer, we tapped one of the best size- and price-appropriate designs we know, Hsu Research's affordable VTF-1 MK2.

Of the five current Zensor models, we sampled three: the Zensor 5 mini-tower, for left and right; the Zensor Vokal center-channel speaker; and the Zensor 1 compact bookshelf pair, for the surround-channel positions. (The remaining Zensors are a larger tower and a larger bookshelf.) With the Hsu sub, this made for an attractively priced, sensibly scaled layout with an equally attractive system price of \$2,244.

The Zensors, though designed and engineered in Denmark (they say so right on the cartons), are, like virtually all competitively priced speakers these days, manufactured in China. Notably, though, they are said to be built in a fully DALI-owned factory, one

### AT A GLANCE



Plus

- Neutral balance
- Excellent center-L/R tonal match
- Superb "small"-sub output and extension



Minus

- Zensor 5 mini-towers are rather short

where DALI claims to make their own drivers, and where they operate day to day under the aegis of a Danish production manager and the same standards applied in their Danish factory.

The three models, all two-way designs, are conventionally constructed of MDF cabinets finished with woodgrain vinyl "wraps." Along with the proprietary drivers, they're equipped with substantial crossovers showing good-grade components. The designs are all simple, square-cornered boxes: unfancy and inexpensive, but nicely finished to an appearance of care and quality that isn't faked.

### Setup, Listening on Tilt

So far, so good. I deployed the DALIs in my long-established locations: the left and right Zensor 5s flanking my 52-inch LCD screen, the Zensor Vokal center on a low stand to reach the

### RATING

**DALI Zensor 5 Speaker System**

Performance ★★★★★

Build Quality ★★★★★

Value ★★★★★

box, went in my standard sub position, to the right of and behind the right-front mini-tower. All the Zensors have solid multi-way binding-post connectors, so hookup was simple and mechanically strong. With all six speakers connected and roughly balanced, I forgot about them and went about my business, letting a week's worth of everyday casual music, movie, and TV fare accomplish any necessary break-in.

Settling down to attentive listening, and beginning as always with full-range stereo (subwoofer-less) playback, I quickly confirmed what I had noticed, visually, from the start: The Zensor 5 mini-towers are really short. Short enough, in fact, that their acoustical center was a good foot

TV's bottom edge, and the Zensor 1s on high shelves astride the listening position. Hsu's VTF-1 MK2 subwoofer, itself another all-black



● The Zensor line has a basic, simple design matched with a nice finish.



## THE VERDICT

Combining DALI's fine-performing, high-value two-way line with one of the best inexpensive 10-inch subwoofers available creates an affordable system that competes well with the many contenders in its price class.

below the height of my ears when I was seated. The vertical dispersion was quite good, but this still left an audible loss of "air" when I sat up straight, compared with slumping down to the mini-towers' own level. The fix was simple: I tilted the speakers substantially backwards, so that their listening axis aimed more toward my ears. DALI supplies the Zensor 5s with adjustable spikes (and rubber bumpers for wood floors), but to get the requisite height, I used three CD jewel cases stacked under each mini-tower's front base-rail. This yielded a tilt of about 12 degrees—not enough to cause a jewel case to slide away, but not far off.

This made the Zensor 5s noticeably more open- and extended-sounding in my setup, and it permitted serious listening to continue, which showed these speakers to feature a very honest, natural tonal balance. Compared with my everyday monitors—long-discontinued two-way stand-mount Energy Veritas speakers, with similar total diaphragm area and enclosure volume—the Zensor 5s sounded slightly "darker," and a subtle shade less airy (or perhaps less "depth-y") is the better way to describe it. They didn't go quite as low as the Energys (which are a paragon of small-speaker bass extension), and they offered just a bare touch of midbass warmth and didn't quite equal the Energys on bass-timbre clarity, but otherwise the match was unexpectedly close. And this is praise indeed, since the Energys cost twice the Zensor 5s' price, even back in the day.

Demanding material like "Why We



● The Zensor 5 is available in Light Walnut, Black Ash, and White.

Can" by Gordon Goodwin's Big Phat Band (an HDtracks 96/24 download) showed off the Zensor mini-towers to good advantage. Their ability to project the complex musical textures of this big band—including not just the horns but the driving bass, all in a squeaky-clean, up-close recording perspective—was impressive and thus quite involving. I had no trouble "listening into" this busy, highly colored music, while big bass and drum transients came across with real authority. Stereo imaging was, as is fairly typical of small two-way designs, quite precise and stable, but a little less rich in front-to-rear depth and air compared with what you'd hear from some much more costly designs. I judged

midrange clarity of strong solo elements (such as trumpet or female vocals) to be excellent, with a nice, solid (though modest) projection in front of the image, as well as a reliably clean, coherent tonality, even at substantial volumes.

For the record, I also compared the Zensor 5s with the bookshelf/stand-mount Zensor 1s destined for the surround channels. The 5 and the 1 are quite similar, despite the 5's additional woofer, front-mounted bass-reflex port (as opposed to the 1's rear-mounted port), and obviously much taller cabinet. The two pairs sounded as close to identical as comparisons in adjacent but still physically discrete locations are likely to achieve. The 5s went marginally lower and played a detectable shade louder with full definition, but the differences were much smaller than you'd likely guess, and in a multichannel system equipped with a well-matched and carefully integrated subwoofer, I think the 1s' deficit would be vanishingly

**DALI ZENSOR 5 SPEAKER SYSTEM AND HSU RESEARCH VTF-1 MK2 SUBWOOFER** • Price: \$2,244 (Zensor 5, \$995 pr; Zensor Vokal, \$395; Zensor 1, \$395 pr; Hsu Research VTF-1 MK2, \$459)  
DALI • dali-speakers.com Hsu Research • hsuresearch.com

small, at least in a fairly small room; penny-pinchers, take note. (Mounted on stands at a proper height and not tilted at all, the 1s perfectly matched the up-tilted 5s' treble presentation.) Geek note: The near-perfect match between the 1 and the 5 is all the more surprising since they have different crossover frequencies: 2,400 versus 2,900 hertz.

### Sub Star

Blending the Zensor 5s with the Hsu Research VTF-1 MK2 subwoofer was relatively easy—and it was possible to a greater degree of precision than is sometimes the case, thanks in no small part to the sub's unusually extensive set of phase, EQ, and crossover adjustments. There are two EQ modes, a continuously variable "Q" control, and two individually pluggable ports (foam bungs are included), all of which makes for a lot of variables. Since even Hsu's "small" sub has plenty of output for my room and tastes, I settled on its "max-extension" option, which entails plugging both ports, selecting EQ1, and crossing over the front DALI pair at 60 Hz (via my pre/pro's setup screen). A little by-ear fine-tuning of sub level yielded a quite seamless blend of the Hsu and the Zensor 5s, as well as bass extension that, on all but the most outrageous "bass cows," left little if anything to be desired.

So while only a supporting player here, the Hsu sub proved to be a star in its own right. It goes shockingly low and loud—equal and possibly even superior to any other 10-incher I've heard (except for the prodigious JL Audio E-Sub e110, which costs \$1,500). On my collection of dubstep synth-bass torture tracks, it excited



● A 10-inch woofer lives inside the Hsu VTF-1 MK2.

room rattles that I know are awakened only by substantial in-room sub-25-Hz sound pressures, and it had plenty left for dynamic events. At my preferred volume, a few decibels shy of reference level, my favorite film-sound clips produced a solid, carpet-flapping bottom octave, free of either doubling or excess, second-octave bass bloat. No question, the VTF-1 MK2 is a winner.

If this combo sounds just about ideal for movie night, you're correct. *Taken 3* is a rather limp example of the art of the sequel, although I warmly endorse its suggestion that at least some of us guys of a certain age still got it—well, one of us guys. At any rate, its soundtrack contains all the elements of the modern action genre: lots of gunfire, lots of ominous synth-bass rumblings, lots of car chases, and lots (and lots) of fist-slugs and body-slams. The DALI-Hsu cohort performed



● The Zensor Vokal and Zensor 1 share the same drivers with the Zensor 5.



## TEST REPORT

- The VTF-1 MK2 features an extensive set of adjustments.

## RATING

Hsu Research VTF-1 MK2 Subwoofer  
 Performance ★★★★★  
 Features ★★★★★  
 Build Quality ★★★★★  
 Value ★★★★★



5.1 playback on a range of centered announcers, both male and female, the Vokal was consistently very, very close, revealing itself by only a tiny dose of higher-midrange hollowness and lower-mid bloom (both probably due as much to floor- and screen-bounce as to the speaker itself). The Vokal appears to be a perfectly ordinary, three-driver, horizontal two-way, albeit with the dual woofers spaced somewhat more closely together than in many such designs, which could well be a factor. Whatever magic (or perhaps luck) DALI employed in its design, kudos are due, especially as this close match engendered a more than usually solid, unified front-stage image, one that served *Taken 3*'s many frenetic, laterally panning chase effects quite well.



Whether in stereo or multichannel playback, the DALI speakers proved capable of ample clean output, absorbing most of my power amp's 150 watts per channel before showing any audible strain. At the same time, since all three Zensor models are of only average sensitivity, something on the order of 100 watts per channel is by no means excessive. That said, these are relatively small two-ways, so a listener with both an unusually large room and a taste for rock-concert levels may find the speakers falling a bit short in output capability.

admirably on all of these. The little Zensor 1s worked quite satisfactorily in the surround locations (aimed a bit to the rear, so that they washed along the side walls, as I always position direct radiators), while the Zensor Vokal center speaker produced clear, easily intelligible dialogue from everything I threw its way.

### Central Success

Notably, in my setup at least, the Vokal produced an unexpectedly close timbral match to its mini-tower flankers. When I compared stereo sound with

### At Home Among the Crowd

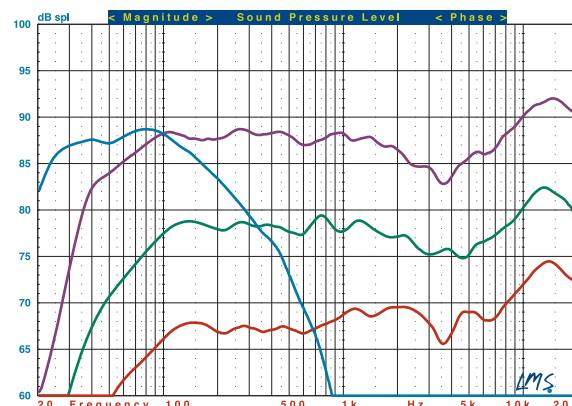
In the end, I can find nothing much critical to say about DALI's Zensors: They are a finely balanced, well-engineered suite. Nevertheless, they've got a lot of competition: Just about all respectable loudspeaker makers



See [soundandvisionmag.com](http://soundandvisionmag.com) for full lab results and technical definitions

## Test Bench

### DALI Zensor 5/HSU Research VTF-1 MK2 Speaker System



**ZENSOR 5 (purple)** +2.52/−4.70 dB, 200 Hz to 10 kHz; −3 dB @ 53 Hz, −6 dB @ 38 Hz; impedance minimum 5.57 ohms @ 230 Hz, phase angle −45.98° @ 98 Hz; sensitivity 87.5 dB, 500 Hz to 2 kHz.

**ZENSOR VOKAL (green)** +2.15/−3.22 dB, 200 Hz to 10 kHz; −3 dB @ 76 Hz, −6 dB @ 57 Hz; impedance minimum 5.54 ohms @ 221 Hz, phase angle −46.66° @ 111 Hz; sensitivity 88 dB, 500 Hz to 2 kHz.

**ZENSOR 1 (red)** +3.73/−2.59 dB, 200 Hz to 10 kHz; −3 dB @ 90 Hz, −6 dB @ 63 Hz; impedance minimum 5.67 ohms @ 224 Hz, phase angle −52.83° @ 120 Hz; sensitivity 86 dB, 500 Hz to 2 kHz.

**HSU VTF-1 MK2 (blue)** Close-miked response, normalized to level @ 80 Hz: lower −3 dB @ 25 Hz, −6 dB @ 20 Hz, upper −3 dB @ 150 Hz with Crossover switch set to Out.—MJP

## SPECS

**Zensor 5:** 5.25 in pulp-cone woofer (2), 1 in soft-dome tweeter; 6.4 x 32.5 x 10.5 in (WxHxD); 22.7 lb • **Zensor Vokal:** 5.25 in pulp-cone woofer (2), 1 in soft-dome tweeter; 17.4 x 6.3 x 11.1 in (WxHxD); 15 lb • **Zensor 1:** 5.25 in pulp-cone woofer, 1 in soft-dome tweeter; 6.4 x 10.8 x 8.7 in (WxHxD); 9.3 lb • **Hsu Research VTF-1 MK2:** 10 in pulp-cone woofer; 200-watt "B.A.S.H." (hybrid-Class H) amplifier; 14 x 20 x 18 in (WxHxD); 66 lb; RCA stereo line input, output; multi-way speaker-level input, continuously variable Volume, Crossover Frequency, "Q" controls; EQ, phase, crossover defeat, power (on/auto/off) switches

(and plenty of less respectable ones) offer a range of value-priced, China-manufactured two-ways, and many of these are awfully good as well, and sold at

highly competitive prices. Such a wealth of choices surely makes shopping both challenging and rewarding, in a crowded field where DALI's Zensors will prove to be very much at home. ♦

- DALI supplies the Zensor 5 with carpet spikes and a rubber bumper.

- The Zensor 1 could serve front-channel duty in a smaller system.



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# When Hairy Met Simple

By Fred Manteghian

## Sony STR-ZA3000ES A/V Receiver

**PRICE \$1,700**

**SONY POSTED** A VIDEO BLOG ON their Website introducing the STR-ZA3000ES and touting how easy it is for a professional installer to set up this AVR. Guess who else would find it simple? That's right, an 8-year-old! Not since my Sherwood stereo model (circa 1982) has a receiver gone into my oft-refreshed setup with as little fuss. That doesn't mean this AVR isn't capable of feats of bravery and bravado; it is. A dealer installing it can easily program it to drop a projection screen when you select the Blu-ray player's input, or hook up a second HDTV in the bedroom to show a source that's different from the one playing in your home theater.

Still, Sony seems to know just how easy it is to set up and use the STR-ZA3000ES, as the printed manual that accompanies it is about the size of some other AVR manufacturers' warranty cards. Plug stuff in, turn it on, and the Easy Setup menu pops up—and you're halfway there. If you do read the manual, buried in there is a note that says you can configure the AVR with your computer or tablet if the receiver is plugged into a router that your computer or tablet sees. The address will be 10.0.0.something. If you get into trouble, go find an 8-year-old.

While the STR-ZA3000ES doesn't offer every feature in the world, the ones included are state of the art. Like most other AVRs, it has proprietary room equalization to help tame acoustical problems in your room. But Sony also provides an unusual "in-ceiling" setting for the front-channel speakers to optimize the sound for speakers placed in the

### AT A GLANCE



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- Excellent audio quality
- Simpler to use than Hodor



Minus

- Missing some popular features like AirPlay and Internet Radio
- No Atmos or DTS:X

ceiling, which is often the case in many of today's custom installations. This setting reportedly performs psychoacoustic manipulation that enhances the illusion of bringing the sound down to appear to match the height of the picture.

Although I couldn't test it with my Pioneer Kuro 1080p HDTV, the Sony

is UHD-capable and will pass 4K video and even scale 1080p video to 4K (though there's no provision for scaling of standard-def, 720p, or 1080i signals). It fully supports HDCP 2.2 copyright management on two of its six HDMI 2.0 inputs and on both HDMI outputs. That's critical for working with new 4K source components moving forward.

There are no front-panel Dolby TrueHD or DTS-HD Master Audio indicator lights, but the STR-ZA3000ES will indeed accept and latch onto a bitstream feed from your player, and notification of the format being decoded will momentarily scroll across the front panel (more on that later). Missing are the two latest surround modes of the moment, object-based Dolby Atmos and DTS:X, though it's hard to fault any seven-channel receiver for not offering these when nine-channel systems (with four height speakers) appear to be the preferred setup for optimum effect. Lastly, Sony does

### RATING

Sony STR-ZA3000ES A/V Receiver

Audio Performance ★★★★★  
Video Performance ★★★★★  
Features ★★★★★  
Ergonomics ★★★★★  
Value ★★★★★

throw in an 8-port gigabit Ethernet switch on the back, doubling the number that my cable company provided me on its router. Between my Blu-ray player, cable box, DirecTV Genie, and Sony PS3 (plus a Mac in the back of the room), the switch was a welcome accessory.

### I'll Have What She's Having

The Advanced Digital Cinema Auto Calibration went smoothly. It requires a quiet room, or it will warn you that the results were inconclusive (as they would be). Sony provides a wisp of a microphone, and the calibration process optimizes for only a single seating location, but it gets the job done. Once complete, it saves three sets of EQ curves (plus Off) that you can switch among—Full Flat, Engineer, and Front Reference. I'm an engineer, but it's probably just coincidence that this was the curve I preferred. It had a more forceful and palpable midrange. Unfortunately, there's no way to see the corrective curves on the screen or the front panel, or even via a connected browser. Neither the included starter manual nor anything I found online explains how many corrective bands there are, and whether they're concentrated in the bass (where they're the most effective) or if they run full-range. This is stuff that an engineer would like to know!



● The solidly built STR-ZA3000ES is 17 inches wide and nearly 30 pounds.



## THE VERDICT

**Plenty of power on tap and easy to use.** A few quirks that don't amount to a hill of beans. Best of all, it sounds great!

## A/V RECEIVER

### SONY STR-ZA3000ES A/V RECEIVER

PRICE: \$1,700

Sony • (877) 865-7669 • sony.com

I'm the only guy in the neighborhood who rocks a 12-foot Yagi antenna on his roof (a holdover from the early days of HDTV), but I make it a point to check out the FM reception of any AVR I get to review. There's nothing like starting a Sunday morning with *Little Steven's Underground Garage* to restore one's faith in music. The STR-ZA3000ES proved sensitive and was able to pull in a favorite station from the University of Bridgeport about 40 miles away with only a little bit of uniform low-level hiss. Most FM receivers would just mute a signal that low. Closer and higher-powered commercial stations, like the one in New Haven that broadcasts Steve Van Zandt's show, were received in full two-channel analog glory. The Sony has space for 30 AM and 30 FM presets. You can scan the band and set the presets with the remote control, using dedicated buttons, and thereafter skip around with the preset scan buttons. Too often, AVR remotes make you jump through hoops to operate the radio. The dedicated buttons are appreciated.

Even better, you can use the receiver's Web browser interface to set or change the AM/FM presets. In fact, anything you can do with the onscreen display, you can do with the browser. Changed settings on the browser, for such things as the EQ

type or speaker size, take immediate effect. It's a very nice feature, and even if you find you don't use it, it gives you a good overview of the AVR's many capabilities.

Besides your main home theater, the STR-ZA3000ES will support two additional zones, and it provides IR repeater inputs so you can control the AVR from the other zones. You can use the second of the HDMI outputs to watch a different program in the second zone (though the onscreen menu or volume changes don't appear on the second HDMI output). If you don't have surround back speakers, you can use those amplifier channels to drive speakers in the second zone, a common practice with 7.1-channel AVRs. The third zone is strictly there to carry line-level two-channel audio to another room.

### Two for T

I was a little concerned that the STR-ZA3000ES wouldn't be able to handle my demanding Revel Salon2 and Voice2 speakers, but I was pleasantly surprised by how well things worked out. CDs sounded great played back in either one of two direct modes. The first of those is Sony's two-channel Analog Direct, which functions only with analog sources and turns off all processing, including the subwoofer output. Pure Direct utilizes all inputs and leaves the subwoofer on while defeating most other processing. Depending on the material, room, and speakers, one or the other will give you stellar results.

I cranked up a new purchase on CD, Marvin Gaye's *Trouble Man* movie

soundtrack from 1972. The original don't-mess-with-Mister-T reference! The content has been digitally remastered, and it sounds phenomenal, reminding me at times of the complexity that Stevie Wonder put into his mid-1970s masterpieces, such as *Innervisions*. The Sony was nimble responding to transient peaks, and it kept the instruments separate in what is sometimes a very densely mixed soundtrack. In addition, there was a smidgen of the "jump factor," if not the overall tonal finesse, that I've found usually only in the finest of separate amplifiers. Volume capability was never an issue in my room, even though the Sony isn't claiming the same numbers wattage-wise as some other manufacturers' price-competitive receivers. See our measurement results in the Test Bench box below.

Robert Ellis' current album, *The Lights from the Chemical Plant*, finds him moving from the Americana-tinged country music of his first album to straight-out Americana. Universal Audio, manufacturer of professional audio interfaces and audio-processing plug-in software, tracked the song "Good Intentions" live and put a video on their Website. I was an instant fan, and the album

sounds amazing as much for the stellar musicians on it as for the simplicity and bare-naked truth of a song like "Bottle of Wine." Even at low volumes, that track—with a simple barroom upright piano and a more closely miked Ellis vocal—is replete with little audio cues, like the creaking of the piano bench and Ellis' quick inhales between phrases. The Sony delivered all the detail.

### I'm at a Lossless for Words

As I mentioned, it's not always visually obvious when the Sony is decoding Dolby TrueHD or DTS-HD Master Audio. When you switch to a high-definition soundtrack, the receiver will scroll the name of the signal type it's decoding across the front panel, just once, and then declare itself in A.F.D. mode. That stands for Auto Format Direct, which the onscreen GUI describes as "exactly producing [the sound] as it was recorded/encoded, without any added surround effects." There are no indicator lamps on the front panel, so if you need to double-check, just pause your movie; when you resume play, you'll see the audio mode name scroll across the front panel again. Once.



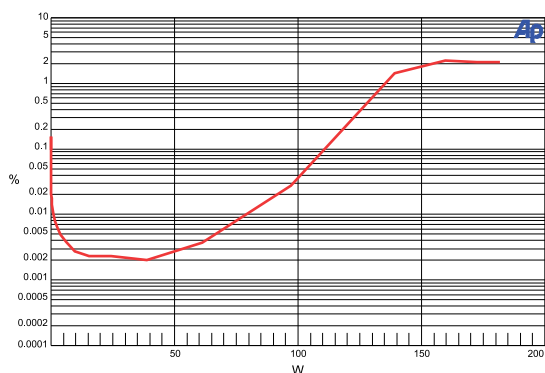
● A detachable cover conceals the front panel's numerous buttons.



See [soundandvision.com/TestBench](http://soundandvision.com/TestBench) for full lab results and technical definitions.

# Test Bench

## Sony STR-ZA3000ES A/V Receiver



**AUDIO** This graph shows the STR-ZA3000ES's left channel, from CD input to speaker output with two channels driving 8-ohm loads. Measurements for THD+noise, crosstalk, signal-to-noise ratio, and analog/digital frequency response were all within expected performance parameters. Full details available at [soundandvision.com](http://soundandvision.com).—*MJP*

	0.1% THD	1.0% THD
2 Channels Continuously Driven, 8-Ohm Loads	110.9 watts	135.5 watts
2 Channels Continuously Driven, 4-Ohm Loads	135.8 watts	172.8 watts
5 Channels Continuously Driven, 8-Ohm Loads	87.6 watts	98.6 watts
7 Channels Continuously Driven, 8-Ohm Loads	65.3 watts	75.8 watts

**VIDEO** Apart from its selectable 1080p-to-4K upconversion (not tested), the Sony's video circuitry is passthrough only, with no scaling or upconversion from lower resolutions (such as 480i and 1080i) to 1080p. Therefore, the only applicable entries in our video test regimen are clipping (passes both above white and below black), resolution, and 3D passthrough. The Sony passed all of these tests, though it produces a bit more visible roll-off in our test's highest-frequency chroma burst than we'd prefer to see. Thus, it earned a Borderline score—though a chroma roll-off is sometimes a deliberate design choice to minimize the possible visibility of potential artifacts in the source material.—*TJN*

**SPECS** **Power Output:** 7 x 100 watts (6 ohms, 2 channels driven) • **Auto Setup/Room EQ:** Proprietary Advanced Digital Cinema Auto Calibration with Auto Phase Matching (APM) • **Video Processing:** Unspecified • **Dimensions (WxHxD, Inches):** 17 x 6.875 x 16.25 • **Weight (Pounds):** 29.56 • **Video Inputs:** HDMI 2.0 (5 rear, 1 front, 2 of 6 HDCP 2.2 capable), component video (2), composite video (2) • **Audio Inputs:** Coaxial digital (1), optical digital (2), stereo analog (4) • **Additional:** USB (front, for setup only), AM (1), FM (1), 8-port gigabit switch (POE available on ports 1 and 2) • **Video Outputs:** HDMI 2.0 (2, both HDCP 2.2), component video (1), composite video (2) • **Audio Outputs:** Stereo analog (2, zone 2 and 3), 7.2-channel pre-out (1), 1/4-inch headphone (1) • **Additional:** RS-232 (1), low-voltage trigger (3), IR repeater (1 in, 2 out)

● The back panel includes an 8-port gigabit switch.



In terms of other audio decoding/processing, the STR-ZA3000ES provides DTS Neo:6 Cinema, Dolby Pro Logic II Movie mode (IIX if you've enabled the surround back channels), and multichannel stereo. There's even a proprietary surround mode called HD-D.C.S. (HD-Digital Cinema Sound), which, depending on the material, would be my first choice. There are actually three flavors of it—Studio, Theater, and Dynamic—but only the first of those served my room well. As far as I could tell, the others just added increasing levels of bass and were a little over the top (or should that be under the bottom?) for my tastes.

The movie *Crazy Heart* serves up Jeff Bridges as a down-and-out country singer who knocks out some rousing music. The audio is spectacular here, by design. In the first take of "Fallin' and Flyin'," set in an intimate bar and featuring Bridges taking a low picking guitar solo, the Sony authentically captured the growl of his 1959 Gretsch Chet Atkins Country Gentleman guitar and Fender Tremolux amp. Switching from A.F.D. (decoding a DTS-HD Master Audio bitstream) to HD-D.C.S. in Studio mode produced some very subtle differences—so subtle, I would never be able to tell them apart in a blind test. I'd be more inclined to use HD-D.C.S.



when listening to less-than-ideal sources, rather than mess with the raw soundtrack of a Blu-ray Disc.

A second version of "Fallin' and Flyin'" takes place in a 12,000-seat outdoor venue, with that big, open stadium sound and the appropriate amount of reverb. You can almost feel the cool night breeze and smell the spilled beers. We get to hear the whole song, this time with Colin Farrell's character joining in. Surprises abound in this movie, not the least of which is how good the Sony sounded delivering it. The receiver had no problem

driving my Revels as loudly as I cared to hear them in my room, a testament to Sony putting their money into audio quality—where, in the end, it counts the most.

The STR-ZA3000ES faces stiff competition in a price range where AVR manufacturers tend to go acronym- and badge-crazy. But Sony isn't having any of that. This new receiver is just a solid, incredibly easy to use, and enjoyable piece of kit that, with its five-year warranty, could keep you happy (if not technologically up to date) for at least that long. ♦



● Sony's remote made setting and retrieving FM presets a breeze.

**The STR-ZA3000ES is solid, incredibly easy to use, and enjoyable.**



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# The Smarter Soundbar

By Mark Fleischmann

## Arcam Solo Soundbar System

PRICE \$2,300

**SOUNDBARS TAKE THREE** forms. The main distinction among them is what serves as the heart of your system. With a passive soundbar, the A/V receiver—with all its features, joys, and woes—is the clearinghouse, and all signal sources go through it. With a less expensive active soundbar, the TV often replaces the receiver, and all signals go through the TV into the bar. But the Arcam Solo Bar is the type of active soundbar that replaces both the receiver and the TV as the heart of your system.

### Two Firsts

The Solo Bar, here reviewed with the Solo Sub, has some unusual talents. Its HDMI switching passes Ultra HD at frame rates up to 30 hertz with a color space of 4:4:4 (uncompressed) or 60 Hz with 4:2:0 (the dominant setting for current UHD). “We are unaware of any other product that does all this,” says Arcam. Unfortunately, however, this first generation of Solo does not include HDCP 2.2 digital rights management, so the bar can’t pass UHD signals with that DRM, and that’s likely to include a lot of emerging UHD content and services. That aside, the Solo Bar/Sub is also the first soundbar system I’ve reviewed with auto setup and room correction. A soundbar that dares to correct the room: That’s moxie.

With HDMI, the Solo Bar can decode DTS-HD Master Audio and Dolby TrueHD lossless surround. In contrast, TV-centric soundbars are usually limited to lossy Dolby Digital, often down-mixed to stereo. Like many bars, the Solo offers Bluetooth

### AT A GLANCE

**+** Plus

- **HDMI, lossless surround decoding**
- **UHD-capable video passthrough**

**–** Minus

- **High-end pricing**
- **No HDCP 2.2 DRM for UHD**

aptX wireless capability. But Arcam ups the ante with two-way streaming, so you can stream not only from mobile device to bar but also from bar to Bluetooth headphones. Furthermore, your smartphone or tablet can control the Solo system with a phone-sized app for iOS or Android.

The Solo Bar comes dressed to kill in an aluminum enclosure. While that might not account for the entire price differential between this \$1,500 product and its plastic competition, it does a lot to control resonance and banish coloration. Twelve inches of its 43.3-inch width are devoted to a shiny center section with a large blue dimmable or defeatable display and five buttons controlling power, input, and volume.

Behind the perforated metal grilles of the two-channel bar are four 4-inch woofers and two 1-inch silk-dome tweeters. They are biampified with

50 watts RMS per side; 10 watts go to the tweeter, and 40 watts are shared between the pair of woofers. The Solo Sub’s down-firing 10-inch driver gets a substantial 300 watts RMS of its own.

On the bar’s back panel are four HDMI 1.4b inputs and one ARC-capable output. HDMI includes CEC to handle other components. Digital coaxial and optical inputs are provided for legacy sources. The sole analog input is a minijack (not including the setup mic input). There is an RCA-type subwoofer output, compatible with any active sub.

The small remote control has helpfully large buttons. In addition to duplicating the front panel’s power, input, and volume controls, the remote has a half-dozen menu navigation buttons for the front-panel display (no onscreen display) plus mute, automatic level control, and sound mode. Modes include the default setting of Stereo plus Movie and Concert options, the latter two with only modest processing—nothing grossly unnatural. The control app duplicates the hand-held remote.

The Solo Sub is a lot more substantial than the lightweight models provided with most soundbars, justifying much of its \$800 price tag. Its charcoal-gray enclosure is machined from fiberboard into a trapezoid shape similar to Monty Python’s 16-ton weight (you young’uns can Google

### RATING

Arcam Solo Soundbar System

Performance ★★★★★

Features ★★★★★

Ergonomics ★★★★★

Value ★★★★★

it), though lighter, at 273 pounds. It is wireless but also has stereo and LFE RCA inputs for a wired connection. In addition to the usual power, phase, volume, and crossover frequency controls, it has a dial for crossover Q, which controls the slope of the rolloff curve to match another surround processor. When the Solo Sub is used with the Solo Bar, Arcam recommends a crossover frequency of 85 Hz (requiring meaningful bass output from the bar) and a crossover Q of 1.1.

To set up the system, I connected both my Oppo BDP-83SE universal disc player and my cable box to the HDMI inputs, the HDMI output to my TV, and the auto setup mic. The auto setup and room EQ program ran quickly. Pairing the sub required me to burrow into the bar’s menu, then hold down a button on the back of the sub for five seconds. Arcam recommends a slight upward tilt of the Solo Bar towards the listening position, though the table I used was high enough to make this unnecessary.

The one initial setup problem was related to subwoofer volume. The wireless pairing worked, but sub output was so low that I had to crank the volume all the way up to get any audible sound. A temporary solution was to do a full system reset, with no subsequent auto setup, plus a wired sub connection. However, a later software update (version 1.14) increased the wireless sub level relative to the bar and eliminated the sub from room EQ. This provided much more headroom for the sub. I used the original room EQ for the movie demos, no EQ for the music demos, and the new EQ for last-minute listening.

### The Dog That Didn’t Bark

The Solo Bar’s most conspicuous sonic traits were absences: of plastic-box midrange coloration, of stridency at the top end, of

● **The Solo is an active soundbar that includes its own auto setup and room EQ.**



## THE VERDICT

If you close your eyes, the Arcam Solo Bar and Solo Sub sound more like a decent component system than a soundbar.

## SOUNDBAR

### ARCAM SOLO SOUNDBAR SYSTEM

PRICE: \$2,300 (Solo Bar, \$1,500; Solo Sub, \$800)

Arcam • (972) 234-0182 • arcam.co.uk • soundorg.com



honkiness and sibilance and other obvious disfigurements of voices. The tweeters are angled outward by 5 degrees, affording a bit of extra perceived width, though the soundstage didn't stray far from the bar in any mode. The Solo Sub (with updated EQ or none at all) offered loads of output but with more subtlety and control than the bloat boxes packaged with most soundbars. Divorced from the initial imperfect EQ, it was the best soundbar-supporting sub I've heard. Room EQ brightened the Solo Bar's tonal balance slightly, though this was offset when I switched from the default Stereo mode to the Movie mode.

The Solo system's maiden voyage was *The Interview*, Kim Jong-un's favorite movie (Netflix, Dolby Digital Plus). When James Franco's talk-show star tells Seth Rogen's producer that the first rule of journalism is "give the people what they want," the producer replies: "That's not the first rule of journalism. I think that's the first rule of, like, circuses and demolition derbies"—this movie, for example. Amid the over-the-top gunplay, gore, and explosions, the Solo Bar kept its cool, stepping up the bombast without dissolving into obvious distortion.

Moving into Blu-ray territory, I cued up *Deliver Us from Evil* (DTS-HD Master Audio), an exorcism story that builds to a predictably shrieking

finale. With most soundbars, I'd have lunged for the remote and cut volume radically during loud passages, but the Solo Bar got the job done with a more modest reduction—which was helpful because otherwise, some dialogue accompanying the hurricane of supernatural howling might have been masked. The Solo could do finicky layering and brute force at the same time.

*Snowpiercer* is the story of a train that holds the only remaining vestige of human life in a world plunged into a climate-catastrophe deep freeze. Here is where I missed conventional discrete surround effects. The 2.1-channel presentation, even in Movie mode, didn't even attempt to convey the wraparound sound of "the rattling ark." Usually, I'd prefer good stereo over bad faux-surround, but this was an exception.

### The Comfy Chair

I listened to many hours of music in various modes, with original room EQ, updated EQ, and no EQ. My eventual preference for music was the Stereo mode, which added detail; room EQ off, which reduced detail; and the sub gain set to 60 percent of maximum. Those settings apply to most of the following notes. Overall, this was a warmer sound, allowing me to run the system at higher but still comfortable levels.

King Crimson's *Live at the Orpheum* was the one piece of music I listened to in every possible configuration, using Tony Levin's tasty bass lines on "The Construction of Light" for subwoofer fine-tuning. Blending between the bar and sub was excellent, even with the sub operating at a higher volume.



And the way the bar lifted Mel Collins' flute and sax solos above the mix, like fluttering birds, had me replaying the track time and again. It also made Robert Fripp's shredding chorded guitar solo on "Sailor's Tale" a thing of shimmering metallic beauty (and psychosis).

I auditioned Brahms' Piano Concerto No. 2 via the historic RCA Living Stereo recording from 1960 by Sviatoslav Richter, Erich Leinsdorf, and the Chicago Symphony Orchestra (available as a separate CD or in Richter's new *Complete Album Collection* box from Sony Classical). It was a perfect storm of texture, layering, and dynamics. The bi-amplification delivered not only the Chicago's macrodynamics—the sound of the archetypal big, confident American orchestra—but also Richter's numerous micro-dynamic shadings and nuances. While the bar didn't transcend its width (angled tweeters or no), it did summon up enormous concert-hall depth. And the imaging on the third movement's solo cello part was ravishingly beautiful. Both the Stereo and Concert modes

produced excellent results, though I still preferred the former's marginally greater focus.

Johnny Hartman's *Songs from the Heart* partners the singer with a quartet including pianist Ralph Sharon (better known for his work with Tony Bennett) and trumpeter Howard McGhee. Most soundbar systems would force an uneven division of Hartman's magnificent jazz baritone between bar and sub. But partly due to the 85-Hz crossover, the voice wasn't localized in the sub at all, though the sub did earn its pay with the string bass lines.

When the official album gave way to the repetitive bonus tracks, I turned down the volume, left my listening position, and sat down at my computer across the room to check e-mail. Then came the final revelation: Once I was no longer looking at the bar, it no longer





● The Solo Sub can run wireless or wired through stereo or RCA inputs.



See [soundandvisionmag.com](http://soundandvisionmag.com) for full lab results and technical definitions



sounded like a bar (even a good one). The bar and its sub sounded like a decent little component system. This lured me back across the room, where I turned up the volume and listened with my eyes closed. Sure enough, as soon as the visual component was cut off, I knew I was listening to a real audio system.

### One for the Road

Following the software update, I ran the movie and music clips on the 2013 DTS Demo Disc. With the sub unyoked from the room correction, the forest flames in *The Hunger Games* were more full bodied, and bass effects in other movies were similarly more substantial and satisfying. Music with a rhythm section came to life, too, especially the monster beat in Queen's live "Another One Bites the Dust."

The Arcam Solo Bar is that rarity: a soundbar that sounds like music. The equivalent excellence of the Solo Sub, liberated from room correction, is even rarer. If you've got the cash, this is a soundbar system actually worth listening to. ♦

*Editor's Note: Readers looking at our frequency response measurements and reading our reviewer's subjective comments should be aware that the Solo, as confirmed by Arcam, was intentionally voiced after extended listening sessions with the severe mid-to-high-frequency roll-off evident in our published response trace (see Test Bench). According to a company rep, "Soundbars are a very tricky compromise that we*

*feel most manufacturers get wrong, going for too much exaggerated 'boom and tizz,' which is immediately impressive in-store but results in products that are very tiring to listen to over any period.*

"Ninety-nine percent of all movie (and music) info is carried in the 100 Hz to 3 kHz region," he went on, "and when we tried a very flat response above this, everything got too zingy and nasty."

*This seems like a reasonable approach from a company with deep audiophile roots for what is intended to be a product for everyday non-audiophile consumers, and Mark Fleischmann's favorable experience with a variety of content would seem to bear out the Solo's eminently listenable character. But such skewed results in the lab inevitably throw us into a gray area in terms of ratings and Top Pick status—as it did in our May issue when we discovered an intentional 80-Hz spike built into the PS Audio Sprout integrated amp/DAC that is intended to add fullness to the*

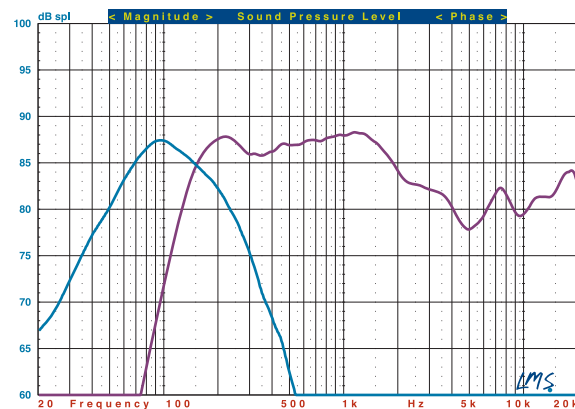
*small speakers the manufacturer expects it to be used with. Under traditional protocol, any product that measured alarmingly far from what we've always deemed the ideal flat response would be penalized for poor engineering and denied TP status. And I do question why unorthodox decisions like these are delivered to users as a fait accompli, with no option to simply switch from the factory's preferred default to a more conventional response curve.*



● The remote has nicely sized buttons.

## Test Bench

### Arcam Solo Soundbar System



**Solo Bar (purple)** +1.31/−9.16 dB, 200 Hz to 10 kHz; −3 dB @ 146 Hz, −6 dB @ 129 Hz.

**Solo Sub (blue)** Close-miked response, normalized to level @ 80 Hz: lower −3 dB @ 62 Hz, −6 dB @ 51 Hz, upper −3 dB @ 174 Hz using LFE input.—MJP

**THIS GRAPH** shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the Solo Bar (purple trace) and Solo Sub (blue trace), in Stereo listening mode. The left channel was measured with grille at a distance of 1 meter. The unusually rolled-off response above 5 kHz has been verified as intentional.—MJP [See Editor's Note at the end of the review.]

## SPECS

**Solo Bar:** 4 in damped paper-cone woofer (4), 1 in silk-dome tweeter (2); 2 x 10 watts (tweeter), 2 x 40 watts (woofers); 43.3 x 5.12 x 4.33 in (WxHxD); 14.1 lb; HDMI 1.4b in (4), HDMI out with ARC (1); coaxial digital in (1), optical digital in (1), 3.5mm analog stereo in (1), sub out (1), USB (update only) • **Solo Sub:** 10 in Kevlar woofer; 300 watts (RMS); 12.5 x 17 x 11.75 in (WxHxD); 27.3 lb; RCA analog stereo and LFE in (1)

That said, I think products should be reviewed in the context of their intended audience and that ultimately the ears of our trusted and very experienced reviewers have final say for audio gear. If they hear but aren't bothered by some offbeat voicing or EQ (subtle or otherwise), or perhaps find it engaging, there may be reasonable justification for it—particularly among these newer "lifestyle" products like soundbars and amp/DACs, where it can be argued

that the old rules may not always apply. So perhaps the best we can do as consumer advocates in these situations is to follow the reviewer's subjective commentary in terms of a recommendation, report what we find on the test bench, and provide the context as I've done here.—Rob Sabin

Audio editor Mark Fleischmann is also the author of the annually updated book *Practical Home Theater* ([quietriverpress.com](http://quietriverpress.com)).

## The Solo Bar is a soundbar that sounds like music.





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# Entertainment Reviews in High Definition



**DOLBY ATMOS**  
American Sniper



## Leave No One Behind



*American Sniper* introduces us to Chris Kyle, on his first tour of duty in Iraq as he's protecting an advancing Marine patrol. Through the scope of his sniper rifle, he spies an Iraqi mother as she hands a grenade to her

preteen child with the intention of killing as many Americans as they can. Kyle must choose to take the life of this kid or risk losing his brothers in arms. To Kyle, the choice is clear: He must protect the troops at any cost. And so we can understand why he went on to become the most lethal sniper in U.S. military history, with 160 confirmed kills during his four tours.

It's scenes such as this that make this movie one of the best of the year, but it's not without its share of controversy. There are those who say the film glorifies war; apparently they didn't watch the same film I did, because it does nothing of the sort. In fact, it shows what happens to our soldiers when they're placed into hellish conditions and then must eventually come home—if

they're lucky enough—and somehow go on with their lives without letting what they've experienced affect their families and friends. It's here that director Clint Eastwood shines, and it certainly helps that Bradley Cooper delivers a career-defining performance as Kyle. Long after the credits roll, you'll be thinking about the impact of war and wondering how anyone can psychologically survive the experience.

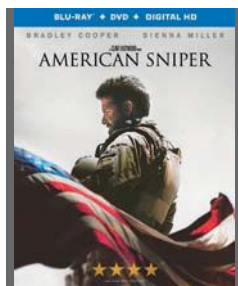
The digitally shot production is fantastic and has several different looks throughout the movie, depending on the scene. The flashback sequences to Kyle's youth in Texas burst with color as he's hunting with his father; and during combat, you see every bit

of dust and grime on the soldiers' uniforms and faces, with every minute detail coming to life.

While the video is outstanding, it's the Dolby Atmos (Dolby TrueHD 7.1 core) that's the hero of the A/V presentation. Directional cues place you right in the middle of war, with helicopter flyovers that might send you diving for cover. As Kyle endures his SEAL training in San Diego, the crush of the waves on the beach engulf the room, and when he's on the firing range, the bullets zip past and impact the back wall as they find their mark. Additionally, as the camera angle changes, the bullet hits on the target move to a different point within the room. Things really heat up during Kyle's fourth tour of duty when a sandstorm overcomes the troops. The soundstage is loaded with activity coming at us from all directions, with bullets whizzing by and the howling wind encompassing the home theater. Scenes such as this will be a great selling tool for object-based audio.

Sadly, the supplements are a sparse affair with just a retrospective look at crafting the story of Chris Kyle, plus a making-of featurette. While both are informative, I would like to have seen more background information on the real Kyle, but I guess it's better than nothing. The set also includes a DVD and an UltraViolet Digital Copy. A further bonus is that Warner will donate one dollar of every purchase to the Wounded Warrior Project, a very worthy charity. This disc is highly recommended.

● David Vaughn



**BLU-RAY**  
STUDIO: Warner Bros., 2014  
ASPECT RATIO: 2.40:1  
AUDIO FORMAT:  
Dolby Atmos/TrueHD 7.1  
LENGTH: 132 mins.  
MPAA RATING: R  
DIRECTOR: Clint Eastwood  
STARRING: Bradley Cooper, Sienna Miller, Kyle Gallner

**PICTURE** ★★★★★  
**SOUND** ★★★★★  
**EXTRAS** ★★★★★

soundandvision.com

**If you think this war isn't changing you, you're wrong.**





## INTO THE WOODS

### FUSED AND FLIPPED FAIRY TALES

Disney



Screenwriter James Lapine and director Rob Marshall's adaptation of the brilliant Stephen Sondheim's stage musical (book by Lapine) is a highly entertaining, moving, and inspiring film that, in this Blu-ray's presentation, makes for great home theater.

The story cleverly weaves together four fairy tales through a plot device centering on a baker and his wife who are unable to have children because of a witch's curse. In order for the witch to lift the curse, the baker must bring her the cow from Jack (of the beanstalk), Little Red Riding Hood's cape, Rapunzel's hair, and Cinderella's slipper.

One theme is parenting—the witch is depicted as an overprotective mother imprisoning Rapunzel away from princes and other wolves; another is the need to escape what's safe in order to find oneself. The characters go into the world's tangled woods of scary but exciting new experiences that, if they can push on through, will bring knowledge and growth because they're living, not just surviving.

Although woods can be dark, contrast is excellent, with bright whites in the cow and deep blacks in the wicked stepsisters' outfits and the princess' leather pants. There's a wide range of well-delineated autumnal tones in trees and peasant costumes but solid, saturated primaries, too, like Red's cape. Patterns are well defined, with no color bleeding, and skintones are natural. Even in shadows, there's enormous detail throughout the in-depth images with tactile-textured costumes (particularly wool weaves), paths, and stonework in Rapunzel's tower.

Sondheim's marvelous music—sometimes harmonious and melodic, other times disturbingly, jaggedly atonal—and ingenious lyrics are extremely clear in a full, distinct DTS-HD Master Audio 7.1

soundtrack. Very natural-sounding, individuated instruments are evenly spread around each of the channels with subtle support from the surrounds here and in the immersive atmospherics of the woods. Cellos are bassy, as is crashing thunder and booming steps of an approaching giant à la *Jurassic Park*.

Chatty commentary by Marshall and producer John DeLuca goes into everyday details of scenes but doesn't reveal much. Two featurettes jump around cast, crew, and director, focusing on ways in which meaning is communicated, as well as on the casting and rehearsals. A deeper four-part piece focuses on the play's adaptation, design, costumes, and the challenges of the book and songs.

● Josef Krebs



BLU-RAY

STUDIO: Disney, 2014

ASPECT RATIO: 2.39:1

AUDIO FORMAT: DTS-HD Master Audio 7.1

LENGTH: 124 mins.

MPAA RATING: PG

DIRECTOR: Rob Marshall

STARRING: Meryl Streep, James Corden, Emily Blunt

PICTURE	★★★★★
SOUND	★★★★★
EXTRAS	★★★★★



## FIFTY SHADES OF GREY

### PRETTY, LAME PORN SHOW

Universal



Are you curious? Really? OK then. Yes, *Fifty Shades of Grey* is a lousy movie, every bit the stinker that you probably expect: dull dialogue, vapid characters, no chemistry either from or between the actors. Here's what you really want to know: Is the movie hot? Is it at least a little bit funny? And (since you are reading *Sound & Vision*) how does the Blu-ray Disc look and sound? Here's the skinny, in that order. The actors who play Christian Grey and Anastasia Steele (the most improbably famous S&M couple on the planet) are very attractive; Dakota Johnson, as Ana, is hot; but their sex is pretty tame soft porn, even by Cinemax standards. (Showtime's *Masters of Sex* is way sexier.) As for humor, the mysterious billionaire and the hayseed coed smirk now and then, more than the book's author E.L. James reportedly liked (she demanded a new director for the sequel, complaining that Sam Taylor-Johnson didn't take her bodice-whipping, one-shade-of-purple prose seriously enough); even so, the playroom is a wit-free zone.

I haven't read the bestselling novel, so I'll have to take the word of my 89-year-old mother, who sampled a chapter, which Amazon had packaged as a bonus with her Kindle, and reported, "It's very badly written." The plot is silliness incarnate: classic supermarket romance, with a Krafft-Ebing twist. Who are these characters? What does Mr. Grey do, how did he make his billions by age 27, where does he get the time to go shopping for rope at a hardware store, and what does he see in the fetching but shallow virgin, Miss Steele? To raise these questions is to underscore the preposterousness of asking, like appraising the flavor and nutritional value of a phallic corn dog at a Tupperware party.

But I've neglected your third question, Dear Reader, the one about

the transfer's sound and vision. Now we're talking! This is a gorgeous 1080p transfer with a pulsating soundtrack, something like a Tom Ford fashion shoot (with the fashion best discarded) scored by a rock-schlock D.J. of an audiophile bent. If anything, it's too pretty, as brightly lit as any bookstore I've seen, with scarcely a shadow darkening even the sex-toy chamber, except to obscure Ana's forbidden triangle in the few seconds of full frontal (and that's in the unrated version).

Finally, the extra features are a bore, starting with a long list of brief actor and character profiles, peaking with an analysis of the BDSM world, and ending with an overly in-depth tour of Christian's apartment. ● Fred Kaplan



BLU-RAY

STUDIO: Universal, 2014

ASPECT RATIO: 2.40:1

AUDIO FORMAT: DTS-HD Master Audio 5.1

LENGTH: 126/129 mins.

MPAA RATING: R/Unrated

DIRECTOR: Sam Taylor-Johnson

STARRING: Dakota Johnson, Jamie Dornan, Jennifer Ehle

PICTURE	★★★★★
SOUND	★★★★★
EXTRAS	★★★☆☆





## ESCAPE FROM NEW YORK

### CALL ME SNAKE—AND BUY THIS DISC

Shout! Factory

When it comes to dystopian movies of the 1980s, John Carpenter's *Escape from New York* clearly stands out as one of the hallmarks of the period and genre, creating a futuristic vision of a society that has deteriorated to the point where the prison system has become a world entirely of its own. In fact, crime in America has gotten so out of hand the entire island of Manhattan is converted into a maximum-security prison from which there is no parole, and where the inmates—a merciless yet colorful lot—are left to govern themselves. But after terrorists strike *Air Force One*, tough-as-nails convicted bank robber Snake Plissken (Kurt Russell) cuts a deal to rescue the president, who has survived a crash-landing within the walls of New York City only to be held hostage on the eve of a critical global summit.

On this Collector's Edition, Shout! Factory delivers the presentation of the film that it has always deserved but never received from other studios. Leagues apart from those mediocre masters past, this disc features a brand-new high-definition transfer struck from the original negative's interpositive. The result is simply marvelous and shows what some love and care can do for a movie. Rich in color, it offers an incredible level of detail that is entirely devoid of noise or grain, while dishing out a strong color palette that makes repeat viewings a pure pleasure. Shadows are flawlessly rendered and never lose detail.

The remastered movie is accompanied by a DTS-HD Master Audio 5.1 track that is surprisingly active and clean. Without distortion or sibilance, fans will also notice the expanded frequency response that allows the iconic score to come to life like never before, while also assuring ample sonic room for the explosive action. Dialogue is well balanced and always understandable.

Packed with supplements culled from previous releases as well as new bonus features, Shout! Factory's treatment is a real treasure trove for fans. The new commentary track featuring actress Adrienne Barbeau and director of photography Dean Cundey is a bit problematic with defective volume levels, but that's really the only weakness in a release that flat-out staggers. Fans of Carpenter's work simply cannot miss out on this opportunity to relive *Escape from New York* in this Collector's Edition. A more glorious treatment, this film has never received. Snake is pleased.

● Guido Henkel



#### BLU-RAY

STUDIO: Shout! Factory, 1981

ASPECT RATIO: 2.35:1

AUDIO FORMAT:

DTS-HD Master Audio 5.1

LENGTH: 98 mins.

MPAA RATING: R

DIRECTOR: John Carpenter

STARRING: Kurt Russell, Lee Van Cleef, Donald Pleasance

#### PICTURE

★★★★★

#### SOUND

★★★★★

#### EXTRAS

★★★★★



## SELMA

### CINEMA FIT FOR A KING

Paramount

Among the most anticipated and admired films of 2014, *Selma* depicts the epochal series of marches by Dr. Martin Luther King, Jr. (David Oyelowo) in Selma, Alabama, which led to the passage of the Voting Rights Act of 1965. Brought to the screen with power and sensitivity by director Ava DuVernay, this Oscar-nominated docudrama features a host of inspired and often intimate acting and noteworthy musical selections, which include the Oscar-winning song "Glory."

Unfortunately, production values don't match the aspirations of *Selma*'s subject matter. The color palette, predominantly earth tones, is muted and flat. Fleshtones tend toward saturation, while fine details of clothing, hair, and skin seem homogenized and nondescript. Architectural subtleties—brick walls, for example—lack precision and sharpness. Blacks lack depth and resolution, making it difficult to delve some of the film's darker scenes and compromising shadow detail. Whites, at least, possess a textural richness. Overall, *Selma* appears soft and drab, delivering images that rarely pop.

Sonically, *Selma* fares much better. Given the film's reliance upon the spoken word, it isn't surprising that vocals are natural and articulate. Throughout the countless scenes of heavily modulated dialogue, it is easy to identify each voice with pinpoint precision. Just as impressive is the presentation of *Selma*'s musical selections, which are perfectly blended into the mix yet rarely call attention to themselves. From weighty bass to wispy trebles, the entire frequency range is cannily balanced. Though there are few hard surround effects, there are plenty of atmospheric effects to occupy the surround channels. Like image quality, however, audio lacks dynamic impact. The film's lone explosion, as well as its scattered gunshots and Foley effects, lack the percussive *thwack* that distinguishes the best modern soundtracks.

As befits this film's historical significance, the assortment of extras is notable for its quantity, if not always its quality. Two full-length director's commentaries offer some worthwhile information hidden among four hours of self-congratulation. Two making-of shorts become a paean to producer Oprah. Most of the half-dozen deleted and extended scenes feature superb acting and are worthy of study by movie buffs and historians alike. In the end, *Selma* honors both its hero and history, but it deserves a better Blu-ray. ● Anthony Chiarella



#### BLU-RAY

STUDIO: Paramount, 2014

ASPECT RATIO: 2.40:1

AUDIO FORMAT:

DTS-HD Master Audio 5.1

LENGTH: 128 mins.

MPAA RATING: PG-13

DIRECTOR: Ava DuVernay

STARRING: David Oyelowo, Tom Wilkinson, Carmen Ejogo

#### PICTURE

★★★★★

#### SOUND

★★★★★

#### EXTRAS

★★★★★





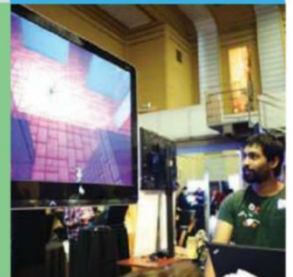
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Feb. 2015

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PERFORMANCE ★★★★★  
FEATURES ★★★★★  
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VALUE ★★★★★

"The only sub on our  
list that earned five  
stars across the board"

by David Vanden  
**Sound & Vision.com,**  
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VTF-15H MK2



## MAPS TO THE STARS

Universal

### LIFESTYLES OF THE RICH, FAMOUS, AND MESSED UP

**▶** Fame, wealth, power, and success are the enviable goals of most people in Hollywood. Once achieved, the struggle and pressure to maintain them are unrelenting and will drive some to drastic lengths to ensure their survival.

Havana Segrand (Julianne Moore) is an actress in the twilight of her career who still lives in the shadow of her more famous deceased mother. Constantly plagued by jealousy, insecurity, and personal demons, she is desperate to keep her star status active while the delicate balance of her life and sanity rapidly unravel. John Cusack is her therapist, a prominent New Age self-help guru with a book deal, a TV show, and a young son who found success in a franchise film series called *Bad Babysitters*. Mia Wasikowska is Agatha, a young woman who has just arrived in Hollywood to find work in the industry and hopefully reconnect with her estranged family, and Robert Pattinson is a limousine driver also dreaming of stardom and contemplating Scientology as a career move.

This colorful cadre of characters shares a resonant interconnectivity with each other, and they are hopelessly locked on a collision course with disastrous consequences. But this catastrophe of a yarn is populated almost entirely with shallow, selfish, and vacuous individuals, so it's hard to feel any real sympathy for them—but maybe that's the point. *Maps to the Stars* unfolds like a perverted cross between Robert Altman's *The Player* and David Lynch's *Mulholland Drive*, and director David Cronenberg shows admirable restraint in his visual approach to this dark story in favor of letting his superlative cast breathe life into these complex and quirky characters and allowing the story to guide itself to its inevitable conclusion.

The HD picture is consistently solid and sports an even contrast and color scheme throughout. Daylight exteriors are fetching, but nighttime interiors can suffer from pixilated grain and soft blur issues.

The audio performs admirably well for a low-budget, character-driven drama. The center-channel dialogue track holds primary focus, while the surround channels give us intermittent flashes of subtle background ambience. Disappointingly, this disc is completely absent of any supplements, though a downloadable Digital Copy is included.

Unless you find train wrecks humorous, it's unlikely you will wrestle any mirth out of this darkly comic fable. Proceed with caution. **● Corey Gunnestad**



**BLU-RAY**  
STUDIO: Universal, 2014  
ASPECT RATIO: 1.85:1  
AUDIO FORMAT:  
DTS-HD Master Audio 5.1  
LENGTH: 112 mins.  
MPAA RATING: R  
DIRECTOR: David Cronenberg  
STARRING: Julianne Moore, John Cusack, Mia Wasikowska

**PICTURE** ★★★★★  
**SOUND** ★★★★★  
**EXTRAS** ★★★★★



## GOODFELLAS 25TH ANNIVERSARY

Warner Bros.

### BAD AND LOVING IT

**▶** If not the first movie to expose the true inner workings of organized crime—in contrast to Coppola's seminal, romanticized *The Godfather*—*GoodFellas* is arguably the most influential, and the most enduring. It is also one of

Martin Scorsese's most popular films, a near-perfect intersection of source material and cinematic execution. Nicholas Pileggi's book *Wiseguy: Life in a Mafia Family* recounted bona-fide gangster Henry Hill's rise from two-bit mob gopher to prolific felon, as well as his ultimate downfall, and the many escapades in between. Adapted with ample violence and profanity, *GoodFellas* (renamed to avoid confusion with contemporary TV series *Wiseguy*) is also incredibly funny, often darkly so, for a more deeply entertaining tale.

I missed *GoodFellas* in theaters but have been watching it regularly since the VHS days. I think I've owned it in every format since, and so while the story might be familiar, the picture and sound have both been noticeably improved for this 25th Anniversary edition. A 4K remaster was performed under Scorsese's personal supervision, and I can confidently state that this is the best I've ever seen *GoodFellas* look. The 16:9 image reveals ample nuance in the faces, the clothing, and the carefully re-created environments. You can read the various labels and appreciate the sheen of a silk suit. Blacks can be harsh and unyielding, mildly disappointing for a movie with so many scenes set at night, or in bars and clubs. But the colors are warm and inviting, and a healthy layer of the original film grain is still evident.

As recently as 2013, *GoodFellas* on Blu-ray was still being issued with a Dolby Digital soundtrack, so it's great to finally be hearing it in uncompromising DTS-HD Master Audio 5.1. The fine bass of an explosion is nicely balanced by the bright tinkle of shattering glass seconds earlier. The soundscape is strangely inviting and subtly shaded, from the crowd at the Copacabana to the ebb and flow of classic tunes woven throughout so many memorable scenes, to the transitional *poof* of a flashbulb and the *blam* of a gunshot.

All previously released on-disc extras appear to have been ported over for this two-Blu-ray affair, including twin commentaries featuring Scorsese, his cast and crew, plus the real Henry Hill and the Fed who brought him in. New for this set is a half-hour documentary packed with on-camera interviews by insiders and famous admirers. **● Chris Chiarella**



**BLU-RAY**  
STUDIO: Warner, 1990  
ASPECT RATIO: 1.78:1  
AUDIO FORMAT:  
DTS-HD Master Audio 5.1  
LENGTH: 145 mins.  
MPAA RATING: R  
DIRECTOR: Martin Scorsese  
STARRING: Robert De Niro, Ray Liotta, Joe Pesci, Lorraine Bracco

**PICTURE** ★★★★★  
**SOUND** ★★★★★  
**EXTRAS** ★★★★★





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# STICKY FINGERS—SUPER DELUXE EDITION

## THE ROLLING STONES



Photo by Peter Webb

The Rolling Stones are at it again. The world's greatest band has rolled out the big guns for its 15-date North American stadium run that's been dubbed the ZIP CODE Tour, a 19-song walk, stomp 'n romp through a half-century of impeccably unimpeachable classics. That taut live set places an emphasis on digging deeper into cuts culled from the perpetually seminal 1971 album *Sticky Fingers*, which has just been given the Super Deluxe box-set treatment by Polydor/UMe. A club gig at The Fonda Theatre in Los Angeles on May 20 saw The Stones rip that joint up 16 times, including their first stabs at Mississippi Fred McDowell's "You Gotta Move" since 1976 and the dreamily soothing "Moonlight Mile" since 1999, both *Sticky* tracks having since made their way into regular rotation as part of the stadium set lists. (Longtime fans like yours truly feel The Stones should do intimate clubs gig like the Fonda outing more often, as it helps loosen up the vibe of songs that often become broader and less adventuresome in stadium settings.)

As befits current practice, you can get *Sticky* in multiple formats and configurations, including the three CD and one DVD mega box, the double 180-gram LP package complete with Andy Warhol's original zippered-pants cover art, and the super deluxe download, the latter currently only via iTunes. But it's the Super Deluxe Edition that requests our most attentive majesties' aural attention. Disc 1 is a remaster of the original album, and while all ten of its tracks have essentially been ingrained into our brains thanks to more than four decades of rock-radio saturation, it remains a masterful representation of how a band can lock into a groove to move past both tragedy (the death of Brian Jones, Altamont) and the faded dream of the '60s.

Disc 2 is the real gem here, a mixture of five alternate takes/mixes plus five live tracks culled from a gig at London's Roundhouse in 1971. "Brown Sugar" finds Eric Clapton on howling slide-guitar duty, a different echo on Mick Jagger's cutting lead vocal, thumpier bass from Bill Wyman, and Keith Richards'

with Charlie Watts' ever-steady beat and Jagger's patented spit-scat helping drive the back half. This "Bitch" be smoking hot! Meanwhile, the jangly, feisty alternate version of "Dead Flowers" could very well have served as the template for the No Depression movement. "We might slow it down," Richards says at its conclusion—and that's exactly what the band did for the actual album.

Disc 3 (*Get Yer Leeds Lungs Out!*) and the DVD (*Live at The Marquee Club, 1971*) are all about the live experience, each capturing The Stones in their tight but loose glory days. The *Leeds* disc expands on the Roundhouse set list that rounded out Disc 2, consisting of sinew-rattling and bone-crushing rides through tracks like the blues-infused "Little Queenie" and the sneering, still poignant "Street Fighting Man." The 14-minute DVD features two tracks culled from Eagle Rock's separate and complete *From the Vault: The Marquee—Live in 1971* release. A 10-minute "Midnight Rambler" kicks off with Jagger blowing a mean harp, his eyes closed and his hands wrapped tightly around the microphone. And then the song takes full flight, oh-so-acutely ebbing and flowing in tempo and intent at will. "Bitch" is even more reckless, furiously punctuated by the late Bobby Keys' sax riffing and Richards' glorious glass-guitar solo.

If you can't get enough of what you want in terms of hearing The Stones rock it live, there are additional releases in Eagle Rock's *From the Vault* series, including the CD/DVD combos *L.A. Forum—Live in 1975* and *Hampton Coliseum—Live in 1981*, with more on the way. But when it comes to garnering a finer appreciation of the sonically tattooed earwig that is *Sticky Fingers*, wild horses couldn't drag me away. **Mike Mettler**



Photo by David Montgomery



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### CD & DVD

**LABEL:** Polydor/UMe

**AUDIO FORMATS:** 44.1-kHz/16-bit PCM Stereo (CDs), 96-kHz/24-bit Dolby True-HD 5.1 (DVD)

**NUMBER OF TRACKS:** 35 (33 on 3 CDs, 2 on 1 DVD)

**LENGTH:** 3:12:31 (CDs), 14:03 (DVD)

**PRODUCER:** Jimmy Miller

**ENGINEERS:** Glyn Johns, Andy Johns, Chris Kimsey, Jimmy Johnson, Larry Hamby, Keith Harwood

**PERFORMANCE** ★★★★★  
**SOUND** ★★★★★





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# The Phantom Exposed

Devialet Phantom Implosive Sound Center

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Viewed dead-on, the Phantom looks like a huge eyeball. Catch it from the side, and it resembles a dinosaur egg. Either way, this self-contained, powered speaker—small enough to be cradled like a baby (albeit a heavy baby at 24 pounds)—embodies an unmistakably unique form factor and technical design. We spoke with Quentin Sannié, cofounder and CEO of Paris-based Devialet, to get the story behind this most unusual speaker, which is available in two versions: the 750-watt Phantom (\$1,990) and the 3,000-watt Phantom Silver (\$2,390).

**S&V:** The Phantom turns traditional speaker design on its ear. How did it come into being?

**QS:** Our motto at Devialet has always been to change lives and bring emotion to people with pure sound. Our Analog Digital Hybrid (ADH) technology and its integration in our Expert range of products enabled us to design and develop high-end products for connoisseurs and audiophiles. But that was only a first step. We wanted to create the best and most compact sound system in the world, which presented challenges in acoustics, physics, mechanics, and design. We had to rethink everything and invent a new process to emit sound.



**S&V:** Tell me about the design.

**QS:** Its unusual shape can be explained by our desire to get as close as possible to the ideal acoustical shape: a spherical speaker.

**S&V:** How do you describe Phantom?

**QS:** Phantom is a three-way, fully active speaker with a reduced acoustical volume of only 6 liters (0.2 cubic feet), which makes it about one-twentieth the size of other speakers delivering the same performance. It uses dual woofers mounted in a push-push configuration to produce bass [down to claimed 16 hertz] and a coaxially arranged midrange driver and tweeter for mid and high frequencies. The acoustical center is inside the structure where the axes of the coaxial speaker and woofers intersect. All sound waves seem to be coming from one point, which is what we call the holographic listening experience. It's simply amazing.

**S&V:** How does it work?

**QS:** Phantom integrates two miniaturized versions of our ADH technology, which combines the musical precision of an outstanding Class A amplifier with the power of a Class D amplifier without the usual constraints (weight, volume, and heat generation) and sonic compromises. ADH is what gives Phantom its physically impactful sound. We still had to face the challenge of how to reproduce the full spectrum of music from such a compact object, so we developed the Heart Bass Implosion (HBI) woofer—a high-efficiency, long-stroke, yet very compact driver. It's four times more powerful than the best equivalent-size woofers on the market, yet six times more compact and six times lighter. Each woofer can move a mass of 30 kilograms (66 pounds). A white paper on Devialet's technologies is available at [en.devialet.com](http://en.devialet.com). —Bob Ankosko

*Visit [soundandvision.com](http://soundandvision.com) for the extended version of this interview, which covers the Phantom's multiroom capabilities and includes more detail on how it works.*

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